REQUEST FOR QUOTATIONS *(THIS IS NOT AN ORDER)*

The Notice of Small Business-Small Purchase Set-Aside on the reverse of this form ☐ is ☒ is not applicable.

PAGE 1 OF PAGES

1. REQUEST NO.	2. DATE ISSUED	3. REQUISITION/PURCHASE REQUEST NO.	4. CERT. FOR NAT. DEF. UNDER BDSA REG. 2 AND/OR DMS REG. 1 ▶	RATING
52-M-APHIS-00	04/07/00			

5A. ISSUED BY

USDA, APHIS, MRP Business Services, Contracting
Butler Square, Fifth Floor, 100 N. Sixth Street
Minneapolis, MN 55403

6. DELIVER BY *(Date)*

5B. FOR INFORMATION CALL: *(Name and telephone no.) (No collect calls)*

Robert J. Crowther (612) 370-2115

7. DELIVERY

☒ FOB DESTINATION ☐ OTHER *(See Schedule)*

8. TO: NAME AND ADDRESS, INCLUDING ZIP CODE

9. DESTINATION *(Consignee and address, including ZIP Code)*

USDA, APHIS, PPQ, PIM
4700 River Road, Unit 140
Suite 4C03
Riverdale, MD 20737

10. PLEASE FURNISH QUOTATIONS TO THE ISSUING OFFICE ON OR BEFORE CLOSE OF BUSINESS *(Date)*

APRIL 7, 2000

11. BUSINESS CLASSIFICATION *(Check appropriate boxes)*

☐ SMALL ☐ OTHER THAN SMALL ☐ DISADVANTAGED ☐ WOMEN-OWNED

IMPORTANT: This is a request for information, and quotations furnished are not offers. If you are unable to quote, please so indicate on this form and return it. This request does not commit the Government to pay any costs incurred in the preparation of the submission of this quotation or to contract for supplies or services. Supplies are of domestic origin unless otherwise indicated by quoter. Any representations and/or certifications attached to this Request for Quotations must be completed by the quoter.

12. SCHEDULE *(Include applicable Federal, State and local taxes)*

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)
1.	Completion of Qualitative Pest Risk Assessment of 10 Commodities for Honduras.	1	JOB	$_____	$_____]
2.	Completion of 12 qualitative pest risk assessments for 12 commodities for 5 Central American countries, including Honduras.	1	JOB	$_____	$_____]
	The attached performance work statement and Federal Acquisition Regulations are hereby incorporated into this request for quotation				

13. DISCOUNT FOR PROMPT PAYMENT ▶	10 CALENDAR DAYS %	20 CALENDAR DAYS %	30 CALENDAR DAYS %	CALENDAR DAYS %

NOTE: Reverse must also be completed by the quoter.

14. NAME AND ADDRESS OF QUOTER *(Street, city, county, State and ZIP Code)*	15. SIGNATURE OF PERSON AUTHORIZED TO SIGN QUOTATION	16. DATE OF QUOTATION
	17. NAME AND TITLE OF SIGNER *(Type or print)*	18. TELEPHONE NO. *(Include area code)*

REPRESENTATIONS, CERTIFICATIONS, AND PROVISIONS

The following representation applies when the contract is to be performed inside the United States, its territories or possessions, Puerto Rico, the Trust Territory of the Pacific Islands, or the District of Columbia.

52.219-1 SMALL BUSINESS CONCERN REPRESENTATION (Apr 84)

The quoter represents and certifies as part of its quotation that it ☐ is, ☐ is not a small business concern and that ☐ all, ☐ not all supplies to be furnished will be manufactured or produced by a small business concern in the United States, its possessions, or Puerto Rico. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

The following provision is applicable if required on the face of the form:

52.219-2 Notice of Small Business-Small Purchase Set-Aside (Apr 84)

Quotations under this acquisition are solicited from small business concerns only. Any acquisition resulting from this solicitation will be from a small business concern. Quotations received from concerns that are not small businesses shall not be considered and shall be rejected.

☆ U.S. GOVERNMENT PRINTING OFFICE : 1984 O - 421-526 (116)

RFQ 52-M-APHIS-00

PERFORMANCE WORK STATEMENT
(Hurricane Mitch Economic Initiative)

I. BACKGROUND

The Minister of Agriculture of Honduras, Mr. Guillermo Alvarado, had requested the personal assistance from the Secretary of the U.S. Department of Agriculture (USDA), the Honorable Daniel Glickman, for assistance in rebuilding Honduras fragile economy and infrastructure damaged by hurricane Mitch. Secretary Glickman gave assurances to the Government of Honduras that USDA will assist in every way possible in rebuilding their economic infrastructure in the wake of hurricane Mitch. Risk assessments must be conducted for each of the products on their export list. Honduras is requesting emergency priority to expedite completion of risk assessments for their products. However, APHIS is not able to divert resources to this emergency. APHIS is, therefore, seeking outside resources to meet this emergency need. The requirements of the contract are listed below.

II. SCOPE OF WORK

To conduct timely qualitative risk assessments on designated fruits and vegetables (including herbs) from Honduras and four other Central American countries that were affected by Hurricane Mitch. Simplified Acquisition Procedures will be followed in accordance with the provisions of Federal Acquisition Regulation (FAR), Part 13.

III. PERFORMANCE REQUIREMENTS

The Contractor shall furnish all personnel, office space, computer software's and peripherals, equipment, supplies, tools, materials, and/or supervision necessary to provide timely completion of qualitative risk assessments on designated fruits and vegetables (including herbs) from Honduras and four other Central American countries that were affected by Hurricane Mitch in accordance with this "performance work statement (PWS)". The service shall include all costs associated with the performance of this contract, including but not limited to, labor, supervision, administrative, travel, and other services that may be necessary during the performance of this contract.

The risk assessments must meet APHIS standards which conform to standards of the International and regional communities for APHIS to accept the risk assessments. There shall be no deviations from APHIS standards. The risk assessment shall be conducted in conformance with the *Guidelines for Pathway-initiated Risk Assessment, Version 5.O* **(Attachment I).** Three Stages of pest risk analysis are mentioned in the aforementioned documents. **The Contractor will be responsible for Stage 1 (Initiating the process) and Stage 2 (Assessing pest risk).**

There are a total of 36 (36) commodity/country risk assessment possibilities. The Contractor shall perform 12 separate risk assessments for each of the commodities identified below. The 12 risk assessments shall include data on all countries identified for a specific commodity. However, the priority for this project is the completion of the 10 risk assessments for the commodities affecting Honduras. Therefore, the project will be a "work in progress", and performed in two phases. Phase 1 will consist of completion of risk assessments for the 10 commodities identified for Honduras as soon as possible, but no later than October 30, 2000. Phase 2 will be the completion of the 10 risk assessments (started in Phase 1 for Honduras) to include the other countries identified for those commodities, plus completion of risk assessments for the remaining 2 commodities, for the countries identified for those commodities. Phase 2 shall be completed as soon as possible, but no later than December 31, 2000. An incentive bonus may be earned for early completion of the risk assessments at the quality level specified herein. Refer to the "Delivery Requirements" and "Contractor Performance Standards" sections of this PWS for additional information.

Each risk assessment shall be composed so that the relevant information, data, and analysis for each country (including Honduras) will be readily apparent when Stage 3 is conducted by APHIS/Plant Protection and Quarantine

(PPQ) personnel. The risk assessments shall include photocopies of all references cited. Any references in foreign languages shall be translated to English by the Contractor.

The Contractor shall arrange for peer review(s) of the risk assessments prior submitting the risk assessments to the Contracting Officer's Representative (COR) for review and approval. The Contractor shall conduct as many peer reviews as necessary to ensure the risk assessments meet APHIS/PPQ standards. **Attachment 2** lists peer review performance standards. The Contractor shall list their name(s), titles, addresses, and their contact method (s) such as telephone and fax numbers, and e-mail addresses in paragraph "D" of the risk assessment document. The same information listed for peer reviewers shall be included for others that contributed their efforts to develop the risk assessments.

The Contractor shall provide a "peer reviewed" draft of each pest risk assessment to the COR for review and comment by APHIS/PPQ reviewers'. All draft and final versions of risk assessments completed by the Contractor shall be delivered electronically in WordPerfect format, in hard copy , and on 3-1/2 inch diskettes. A separate diskette is required for each risk assessment. The COR will provide written/electronic comments from the APHIS/PPQ reviewers' to the Contractor within 14 working days of receipt of the draft risk assessments. The Contractor shall incorporate the APHIS/PPQ reviewers' comments and send a final document to the COR, within 14 working days for a second, and final, review by APHIS/PPQ reviewers'. The COR will provide written/electronic comments from the reviewers' to the Contractor within 14 working days thereafter. After the risk assessments are accepted by APHIS/PPQ, the Contractor will be considered as having completed the terms of the contract.

Attachment 3 - is provide for information only as an example of a risk assessment completed using the Version 5.0 Guidelines in Attachment 1. It is entitled, Importation of Grapes, Vitis spp., from Korea into the United States - A Qualitative, Pathway - Initiated Pest Risk Assessment.

IV. COMMODITY/COUNTRY COMBINATIONS

COMMODITY	**PLANT PART**	**COUNTRY**
1. Mint (*Mentha* spp)	leaves	El Salvador & Honduras
2. German chamomile (*Matricaria chamomilla)*	leaves	******5 countries
3. Basil (*Ocimum basidium*)	leaves	Honduras
4. Fennel (*Foeniculum vulgare*)	leaves	******5 countries
5. Long bean (*Vigna unguiculata* ssp. *sesquipedalis)*	fruit	Nicaragua
6. Lorocco (*Fernaldia* spp.)	leaves	******5 countries
7. Oregano (*Origanum* spp.)	leaves & stems	El Salvador & Honduras

8. Parsley (*Petroselinum crispum*)	leaves	El Salvador & Honduras Panama
9. Rosemary (*Rosmarinus officinalis*)	leaves	El Salvador & Guatemala
10. Sage (*Salvia officinalis*)	leaves	El Salvador, Honduras, & Nicaragua
11. Waterlily (lotus) *(Nelumbo nucifera*)	# root	**5 countries
12. Yam bean (jicama) *(Pachyrhizus* spp.)	# root	Belize, El Salvador, Honduras, Nicaragua, & Panama

Notes:

**5 countries: Costa Rica, El Salvador, Guatemala, Honduras, & Nicaragua.

Imported for consumption, and not for planting. In compliance with CFR319.56(2)a.

V. DELIVERY REQUIREMENTS

The COR will furnish to the contractor pest interception and import history information within 5 days after notice of award. The COR will coordinate affected States and industry review of the risk assessments, if necessary. Completion of the risk assessments applicable to Honduras (10 commodities) are required no later than October 31, 2000. Completion of all 12 risk assessments, for all 5 countries, including Honduras, are required as soon as possible, but no later than December 31, 2000. The final version of the 12 risk assessments shall include each of the 5 countries, including Honduras. The Contractor may earn an incentive bonus for early delivery as outlined below in the "Contractor Performance Standards" section of this PWS.

VI. CONTRACTOR PERFORMANCE STANDARDS

Contractor performance will be monitored throughout the effective period of the contract. The Contractor will be measured based on the following criteria:

PERFORMANCE ELEMENT	PERFORMANCE STANDARD	MAXIMUM ERROR RATE	METHOD OF SURVEILLANCE
Conform to APHIS Standards and the Standards of the International and Regional Communities. (Attachment I).	Same as Performance Element	0%	COR Review Of Draft/ Final Of 12 Qualitative Pest Risk Assessments

Timely Completion Of 10 Qualitative Pest Risk Assessments For The Commodities Identified <u>For Honduras.</u>	Completion of Risk Must Be Accepted by USDA prior to October 31, 2000.	Refer to Incentive Schedule	Monitoring of Progress Reports/APHIS PPQ Acceptance of Qualitative Pest Risk Assessment.
Timely Completion Of <u>All 12</u> Qualitative Pest Risk Assessments , For Each of the 7 Countries, Including Honduras.	<u>All 12</u> Qualitative Pest Risk Assessment Completed By December 31, 2000.	Refer to Incentive Schedule	Government COR Monitoring of Progress Reports/ APHIS, PPQ review Of Draft/Final of 12 Qualitative Pest Risk Assessments.

INCENTIVE SCHEDULE:

Completion/Acceptance Of 10 Qualitative Pest Risk Assessments For the Commodities Identified <u>For Honduras</u> by October 1, 2000.	Contract Rate Plus 10% Incentive Fee
Completion/Acceptance Of Qualitative Pest Risk Assessments For the Commodities Identified <u>For Honduras</u> by October 15, 2000.	Contract Rate Plus 8% Incentive Fee
Completion/Acceptance Of Qualitative Pest Risk Assessments For the Commodities Identified <u>For Honduras</u> by October 31, 2000.	Contract Rate Plus 5% Incentive Fee
Completion/Acceptance Of <u>All 12</u> Qualitative Pest Risk Assessments by October 31, 2000, For All Countries, Including Honduras.	Contract Rate Plus 10% Incentive Fee.
Completion/Acceptance Of <u>All 12</u> Qualitative Pest Risk Assessments between November 1, 2000, and December 31, 2000, For All Countries, Including Honduras.	Contract Rate

VII. PROGRESS REPORTS

The Contractor shall provide a monthly progress report to the Contracting Officer, and the COR by the 5th of each month until all risk assessments are completed in accordance with this PWS. Progress reports shall be provided in hard copy and in WordPerfect format on 3-1/2 inch diskettes.

VIII. CONTRACTOR QUALIFICATION REQUIREMENTS

Minimum Skills and Experience:

1. Contractor personnel conducting risk assessments must have a minimum of a Bachelor's degree in entomology or plant pathology. Other skills in acarology, nematology, malacology, biology, and virology are desirable. Helpful course work includes ecology, botany, statistics, report writing, geography, and economics.

2. Contractor personnel shall have a minimum of five years of State/Federal plant regulatory experience at port, domestic, and/or foreign locations. Other experiences, such as employment in an extension service providing pest management recommendations is helpful.

IX. PREPARATION OF OFFERS

Offeror's shall prepare an original and 3 copies of a technical proposal, and an original and 1copy of the business proposal. The technical proposal shall include a "detailed work plan (DWP)" explaining how they would organize and perform the requirements of this PWS should the offeror receive the contract award. The DWP shall identify proposed major activities and target dates (timeline) for completion of each pest risk assessment, and provide evidence that the personnel designated to work on this project have the minimum skills and experienced required by this PWS. The business proposal shall include a cost breakdown outlining the costs associated with the performance of this contract, including general and administrative expense and profit.

X. EVALUATION FACTORS FOR AWARD

The Government will make award to the offeror whose offer conforms to solicitation requirements and represents the "best value" to the Government, technical quality, cost or price, and other price related factors considered. For this RFQ, the combined weight of technical factors are of equal to cost or price, and other price related factors. Therefore, award may be made to other than the lowest priced responsible offeror. Technical quality will be determined by the background, education, and experience of key personnel designated by the offeror to work on this project.

Simplified Acquisition Procedures (Updated through FAC-15)

52.252-2 Clauses Incorporated by Reference
(Feb 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon Request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address (es): **http://www.arnet.gov/far/**

Required Clauses

Section I:	**Title**	**Date**
52.216-24	Limitation of Government Liability	Apr 1984
52.216-25	Contract Definitization	Oct 1997
52.225-13	Restrictions on Certain Foreign Purchases	Feb 2000
52.233-3	Protest After Award	Aug 1996
52.244-6	Subcontracts for Commercial Items and Commercial Components	Oct 1998

Simplified Acquisition Procedures (Updated through FAC-15)

52.252-1 Solicitation Provisions Incorporated by Reference (Feb 1998)

This Solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address (es):

http://www.arnet.gov/far/

Section K: Representations, Certifications, and Other Statements of Offerors

Section K:

(X)	**52.204-3**	Taxpayer Identification (Full Text Attached)	Oct 1998
( )	**52.207-4**	Economic Purchase Quantity Supplies	Aug 1987
( )	**52.212-3**	Offerors Representations and Certifications--Commercial Items (Full Text Attached)	Oct 1999
( )	**52.212-3**	Offerors Representations and Certifications--Commercial Items (Alternate I.) (Full Text Attached)	Oct 1998
( )	**52.212-3**	Offerors Representations and Certifications--Commercial Items (Alternate II.) (Full Text Attached)	Oct 1998
( )	**52.212-3**	Offerors Representations and Certifications--Commercial Items (Alternate III.) (Full Text Attached)	Jan 1999
(X)	**52.219-1**	Small Business Program Representation (Full Text Attached)	May 1999
(X)	**52.219-1**	Small Business Program Representation (Full Text Attached) (Alternate I.)	Nov 1999
(X)	**52.219-1**	Small Business Program Representation (Full Text Attached) (Alternate II.)	Nov 1999
( )	**52.219-19**	Small Business Concern Representation for the Small Business Competitiveness Demonstration Program (Full Text Attached)	Jan 1997
( )	**52.219-20**	Notice of Emerging Small Business Set-Aside (Full Text Attached)	Jan 1991
( )	**52.219-21**	Small Business Size Representation for targeted Industry categories under the Small Business Competitiveness Demonstration Program (Full Text Attached)	May 1999
( )	**52.219-22**	Small Disadvantage Business Status (Full Text Attached)	Oct 1999
( )	**52.219-22**	Small Disadvantage Business Status (Full Text Attached) (Alternate I.)	Oct 1998
(X)	**52.222-22**	Previous Contracts and Compliance Reports	Feb 1999
( )	**52.222-25**	Affirmative Action Compliance	Apr 1984
( )	**52.225-1**	Buy American Act--Balance of Payments--Program--Supplies	Feb 2000
( )	**52.225-2**	Buy American Act--Balance of Payments Program Certificate	Feb 2000
( )	**52.225-4**	Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program Certficate	Feb 2000
( )	**52.225-4**	Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program Certficate (Alternate I.)	Feb 2000
( )	**52.225-4**	Buy American Act--North American Free Trade Agreement--Israeli Trade Act--Balance of Payments Program Certficate (Alternate II.)	Feb 2000
( )	**52.225-6**	Trade Agreements Certificate	Feb 2000
( )	**52.225-20**	Buy American Act--North American Free Trade Agreement Implementation Act--Balance of Payments Program Certificate	Jan 1997
( )	**52.225-20**	Buy American Act--North American Free Trade Agreement Implementation Act--Balance of Payments Program	Jan 1997

		Certificate (Alternate I.)	
( )	**52.226-2**	Historically Black College or University and Minority Institution Representation	May 1997
( )	**52.227-15**	Representation of Limited Rights Data and Restricted Computer Software	May 1999
( )	**52.236-8**	Other Contracts	Apr 1984
( )	**52.241-1**	Electric Service Territory Compliance Representation (Full Text Attached)	Feb 1995
( )	**52.247-53**	Freight Classification Description (Full Text Attached)	Apr 1984

Simplified Acquisition Procedures (Updated through FAC-15)

52.252-1 Solicitation Provisions Incorporated by Reference (Feb 1998)

This Solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address (es):

http://www.arnet.gov/far/

Sections L & M: Provisions

Section L:

(X)	**52.204-6**	Data Universal Numbering System (DUNS) Number	Jun 1999
( )	**52.211-1**	Availability of Specifications listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMC Part 101-29 (Full Text Attached)	Aug 1998
( )	**52.211-2**	Availability of Specifications listed in DOD Index of Specifications and Standards, Descriptions listed in the Acquisition Management, System and Data Requirements Control list, DOD 5010.12-L (Full Text Attached)	Aug 1998
( )	**52.211-3**	Availability of Specifications listed in the GSA Index of Federal Specifications, Standards and Commercial Item Descriptions (Full Text Attached)	Jun 1988
( )	**52.211-4**	Availability of Examinations of Specifications not listed in the GSA Index of Federal Specifications Standards and Commercial Item Descriptions (Full Text Attached)	Jun 1988
( )	**52.211-6**	Brand Name or Equal	Aug 1996
( )	**52.211-7**	Alternatives to Government Unique Standards	Nov 1999
( )	**52.211-14**	Notice of Priority Rating For National Defense Use	Sep 1990
( )	**52.212-1**	Instructions to offerors--Commercial Items	Nov 1999
( )	**52.214-34**	Submission of Offers in the English Language	Apr 1991
( )	**52.214-35**	Submission of Offers in United States Currency	Apr 1991
( )	**52.219-5**	Very Small Business Set-Aside	Mar 1999
( )	**52.219-5**	Very Small Business Set-Aside (Alternate I.)	Mar 1999
( )	**52.219-5**	Very Small Business Set-Aside (Alternate II.)	Mar 1999
( )	**52.215-20**	Requirements for Cost of Pricing Data or Information Other Than Cost or Pricing Data (Full Text Attached)	Oct 1997
( )	**52.215-20**	Requirements for Cost of Pricing Data or Information Other Than Cost or Pricing Data (Full Text Attached) (Alternate I.)	Oct 1997
( )	**52.215-20**	Requirements for Cost of Pricing Data or Information Other Than Cost or Pricing Data (Full Text Attached) (Alternate II.)	Oct 1997
( )	**52.215-20**	Requirements for Cost of Pricing Data or Information Other Than Cost or Pricing Data (Full Text Attached) (Alternate III.)	Oct 1997
( )	**52.215-20**	Requirements for Cost of Pricing Data or Information Other Than Cost or Pricing Data (Full Text Attached) (Alternate IV.)	Oct 1997
( )	**52.216-1**	Type of Contract (Full Text Attached)	Apr 1984
( )	**52.219-24**	Small Disadvantaged Business Participation Program Targets	Jan 1999
( )	**52.225-7**	Waiver of Buy American Act for Civil Aircraft and Related Articles	Feb 2000
( )	**52.232-38**	Submission of Electronic Funds Transfer Information With Offer	May 1999
( )	**52.237-1**	Site Visit	Apr 1984
( )	**52.247-4**	Inspection of Shipping and Receiving Facilities	Apr 1984
( )	**52.247-45**	F.o.b. Origin and/or F.o.b. Destination Evaluation	Apr 1984
( )	**52.247-46**	Shipping Point(s) Used in Evaluation of F.o.b. Offers	Apr 1984
( )	**52.252-3**	Alterations in Solicitation (Full Text Attached)	Apr 1984

( )	**52.252-5**	Authorized Deviations in Provisions (Full Text Attached)	Apr 1984

Section M:

( )	**52.212-2**	Evaluation-Commercial Items (Full Text Attached)	Jan 1999
( )	**52.225-4**	Evaluation of Foreign Offers	Aug 1996
( )	**52.225-17**	Evaluation of Foreign Country Offers	Feb 2000
( )	**52.247-20**	Estimated Quantities or Weights for Evaluation of Offers	Apr 1984
( )	**52.247-47**	Evaluation-F.o.b. Origin	Apr 1984
( )	**52.247-49**	Destination Unknown	Apr 1984
( )	**52.247-50**	No Evaluation of Transportation Costs	Apr 1984
( )	**52.247-51**	Evaluation of Export Offers (Full Text Attached)	Feb 1995
( )	**52.247-51**	Evaluation of Export Offers (Alternate I.) (Full Text Attached)	Feb 1995
( )	**52.247-51**	Evaluation of Export Offers (Alternate II.) (Full Text Attached)	Apr 1984
( )	**52.247-51**	Evaluation of Export Offers (Alternate III.) (Full Text Attached)	Apr 1984

Guidelines for Pathway-Initiated Pest Risk Assessments

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine
Permits and Risk Assessment
Commodity Risk Analysis Branch
4700 River Road, Unit 133
Riverdale, MD 20737-1236

— Version 5.0 —

April 10, 2000

Introduction

This document presents guidelines for pathway-initiated, qualitative pest risk assessments conducted by Plant Protection and Quarantine (PPQ) within the Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture. The goal is to harmonize PPQ risk assessment procedures with guidelines provided by the Food and Agriculture Organization (FAO) and the North American Plant Protection Organization (NAPPO). The use of biological and phytosanitary terms conforms with the FAO Glossary of Phytosanitary Terms (FAO, 1999) (included as Appendix 1 of this document), the Definitions and Abbreviations (Introduction Section) in International Standards for Phytosanitary Measures, Section 1—Import Regulations: Guidelines for Pest Risk Analysis (FAO 1996) and the NAPPO Compendium of Phytosanitary Terms (NAPPO 1996).

Pest risk assessment is one of three stages of an overall pest risk analysis (FAO, 1996):

Stage 1: Initiating the process for analyzing pest risk (identifying pests or pathways for which the pest risk analysis is needed)
Stage 2: Assessing pest risk (determining which pests are quarantine pests, characterized in terms of likelihood of entry, establishment, spread, and economic importance)
Stage 3: Managing pest risk (developing, evaluating, comparing and selecting options for dealing with the risk)

This document provides a template for conducting FAO Stages 1 and 2. The FAO process (1996) also describes two general categories of initiating events for pest risk analyses. A pest risk analysis can be either "pest initiated" (a quarantine pest is discovered in a new area, a pest is intercepted at a port of entry, *etc*.) or "pathway initiated" (international trade is initiated in a new commodity, *etc*.). This document describes procedures used by PPQ for pathway-initiated pest risk assessments.

PPQ conducts pathway-initiated pest risk assessments at both qualitative and quantitative levels. This document outlines the process for qualitative pest risk assessments. Both types of assessments are similar in most respects, however, in quantitative assessments quarantine pests are examined in greater detail and provide a quantitative assessment of the likelihood of introduction (see Step 6). PPQ completes six basic steps in pathway-initiated pest risk assessments:

Stage 1 (FAO): Initiating Pest Risk Analysis Process

Step 1. Document the initiating event(s) for the PRA.

Stage 2 (FAO): Assessing Pest Risk

Step 2. Assess Weediness Potential (of the species to be imported).

Step 3. Identify Previous Risk Assessments, Current Status of Importations, and Pertinent Pest Interceptions.

Step 4a. Pest Categorization. Produce a list of pests of the commodity parent species and then determine their quarantine status.

Step 4b. Identify Potential Quarantine Pests. Identify pests of potential quarantine significance reported to be associated with the host species in the exporting country/region.

Step 4c. Identify Quarantine Pests Likely to Follow the Pathway. Determine which quarantine pests may reasonably be expected to follow the pathway.

Step 5. Assess Consequences of Introduction. For each quarantine pest expected to follow the pathway, estimate the consequences of introduction. Issues to consider include "...the establishment, spread and economic importance potential in the PRA area" (FAO, 1996). Environmental impacts are also addressed.

Step 6. Assess Introduction Potential. For each quarantine pest expected to follow the pathway, estimate the likelihood of introduction via the pathway.

Step 7. Conclusion / Phytosanitary Measures: Pest Risk Potential of Quarantine Pests. Produce a single rating which represents an overall estimate of the risk posed by each quarantine pest. Comment briefly on the meaning of the Pest Risk Potentials for each quarantine pest. Although this document focuses on risk assessment, the risk assessment (FAO Stages 1 and 2) and risk management (FAO Stage 3) stages are interrelated. Accordingly, the risk assessor may occasionally make brief comments regarding risk management options associated with the requested commodity importations.

Methods: Pest Risk Assessment Guidelines

FAO Stage 1: Initiating Pest Risk Analysis (PRA) Process

Step 1. Document the Initiating Event(s) for the PRA

Document the reason(s) for initiating the pathway-initiated PRA, *e.g.*, importation of a new commodity or new importation from a new area provides a potential pathway for the introduction of plant pests.

Stage 2 (FAO): Assessing Pest Risk

Step 2. Assess Weediness Potential (Table 1)

Assess the weediness potential of the imported species. This step is important to the initiation process because if the assessment finds that the species being considered for import poses a risk as a weed pest, then a "pest-initiated" pest risk assessment may be initiated. If the species to be imported passes the weediness screening, the pathway-initiated pest risk assessment continues. Table 1 shows how weediness potential is assessed and can be used to present findings and conclusions.

Table 1. Process for Determining Weediness Potential of Commodity

Commodity: (Scientific and common names of commodity)

Phase 1: Consider whether the species is new to or not widely prevalent in the United States (exclude plants grown under USDA permit in approved containment facilities)?

Phase 2: Answer Yes or No to the following questions:
Is the genus, species, or subspecies listed in:

____ Geographical Atlas of World Weeds (Holm *et al.*, 1979)
____ World's Worst Weeds (Holm *et al*., 1977)
____ World Weeds: Natural Histories and Distribution (Holm *et al.*, 1997)
____ Report of the Technical Committee to Evaluate Noxious Weeds; Exotic Weeds for Federal Noxious Weed Act (Gunn and Ritchie, 1982)
____ Economically Important Foreign Weeds (Reed, 1977)
____ Weed Science Society of America list (WSSA, 1989)
____ Is there other literature reference indicating weediness (*e.g.*, AGRICOLA, CAB, Biological Abstracts, AGRIS; search on "species name" combined with "weed").

Phase 3: Conclusion:

IF: 1. The species is widely prevalent in the United States and the answers to all of the questions are **no**...
Proceed with the pest risk assessment.

2. The species is widely prevalent in the United States and the answer to **one** or more of the questions is **yes**...
Proceed with the pest risk assessment, provide comments on findings in text, and incorporate findings regarding weediness into the Risk Elements described below.

3. The species is new to or not widely prevalent in the United States and the answers to all of the questions are **no**...
Proceed with the pest risk assessment.

4. The species is new to or not widely prevalent in the United States and the answer to **one or more** of the questions is **yes**...
Consult authority under the Federal Noxious Weed Act for listing plant species as a noxious weed and consider the advisability of performing a pest-initiated pest risk assessment on the plant species. Provide explanations of findings in text.

Step 3. Identify and Cite Previous Risk Assessments

Identify previous pest risk assessments from the same country/region and the same, or related commodity. If there is an existing risk assessment that adequately assesses the risks in question,

the risk assessment stops. Describe appropriate current importations, *e.g.*, same commodity from other countries, other commodities from the country in question. Report pertinent pest interceptions at United States ports of entry.

Step 4a. Pest Categorization (Table 2)
PPQ adheres to accepted international definitions of quarantine pest: a pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled (FAO, 1996; NAPPO, 1996). The first step in identifying quarantine pests is to present a comprehensive pest list of potential quarantine pests known to occur in the country or region from which the commodity is to be exported (Table 2). The list includes all pests in the exporting country known to be associated with the parent species of the proposed export commodity. Because all pests on the list are associated with the plant species they are considered to be "of potential economic importance" (FAO, 1996). The listed pests may or may not also occur in the United States.

There are two primary components to the definition of quarantine pest (FAO, 1996; NAPPO, 1996). First, a pest must be "of potential economic importance." To be included on the comprehensive list of potential quarantine pests, an organism is considered to be of potential economic importance because scientific evidence, as indicated in the literature, demonstrates that an organism has an association with the plant species being assessed. Thus, all of the listed organisms are potential quarantine pests. Second, to be considered a quarantine pest, an organism must satisfy geographic and regulatory criteria, specifically, the pest must be "not yet present there, or present but not widely distributed and being officially controlled" (FAO, 1996; NAPPO, 1996). Information should be collected and provided in the risk assessment which documents how each organism satisfies these criteria. Pertinent geographic and regulatory information, *i.e.*, with respect to the exporting country and the United States, should be provided on the comprehensive pest list. If none of the potential quarantine pests satisfy the geographic and regulatory criteria as a quarantine pest, the PRA stops. For each pest on the list, include:

- scientific name (when available)
- selected references
- limited pertinent information regarding:
    - the regulatory status of a pest, as determined by APHIS or other Federal Agencies
    - pest biology, *e.g.*, pest-parent species or pest-commodity association, pathway association, life history, climatic tolerance
    - geographic distribution with respect to the exporting country and the U.S.
    - regulatory history, *e.g.*, interception records at U.S. ports.

The list of information sources, at a minimum, should include:

- Literature reviews using electronic databases, *e.g.*, AGRICOLA, CAB database, University of California computer information system, MELVYL
- Previous risk assessments covering importation of the commodity
- The PPQ catalogue of intercepted pests and interception records
- CIE and CMI. Distribution Maps/Descriptions of Plant Pests (Arthropods, Fungi, Bacteria)
- Various texts and indices of plant diseases and pathogens
- PPQ files on Pests Not Known To Occur in the U. S. (PNKTOs) and Insects Not

Known To Occur (INKTOs)
- International databases, *e.g.* EPPO, FAO, CABI/CPC

Step 4b. Identify Quarantine Pests Likely to Follow the Pathway

Quarantine pests identified as likely to be associated with the potential export commodity are subjected to steps 5-7. The biology and pest potential for these pests is documented as completely as possible. It must be reasonable to assume these quarantine pest will:

- be present in the exporting country
- be associated with the commodity at the time of harvest
- remain with the commodity in viable form during harvesting, packing and shipping procedures

Because pests associated with the parent species are listed, there will be quarantine pests not expected to follow the pathway. For example:

- a pest may be associated only with plant parts other than the commodity
- a pest may not reasonably be expected to remain with the commodity during harvest and packing

Pests not expected to follow the pathway are not considered further. Supporting information must be documented on the pest list or in the text. The decision not to further analyze a particular pest applies only to the current PRA; a pest may pose a different level of risk for the same commodity from a different country or from a different commodity from the same host plant species. However, should any of the pests be intercepted in shipments of the commodity, quarantine action may be taken at the port of entry and additional risk analyses may be conducted.

IF NO POTENTIAL QUARANTINE PESTS ARE IDENTIFIED, THE PRA STOPS AT THIS POINT.

Table 2. Pests Associated With Commodity in Country					
Pest	Geographic Distribution[1]	Plant Part Affected[2]	Quarantine Pest[3]	Likely To Follow Pathway[3]	References
Arthropods					
Pest species Author (Order: Family)					
Viruses					
name (Family)					
Bacteria					
Pest species Author (Order)					
Fungi					
Pest species Author (Class or Superclass: Order)					
Nematodes					
Pest species Author (Family)					
Mollusks					
Pest species Author (Family)					

[1]Use two letter abbreviations to represent countries and states
[2]Use abbreviations, *e.g.*, L (leaf), F (fruit), to indicate affected plant parts
[3]Use "Yes" or "No"
*Additional explanatory notes for Table entries may be placed here

IF NO QUARANTINE PESTS ARE EXPECTED TO FOLLOW THE PATHWAY, THE PRA STOPS.

Step 5. Assess Consequences of Introduction (Table 3)
The undesirable outcomes being considered are the negative impacts resulting from the introduction of quarantine pests. After identifying those quarantine pests that could reasonably be expected to follow the pathway, the assessment of risk continues by considering the consequences of introduction (Table 3). For each of these quarantine pests, the potential consequences of

introduction are rated using five Risk Elements. These elements reflect the biologies, host ranges and climatic/geographic distributions of the pests. For each Risk Element, pests are assigned a rating of or or Low (L, 1 point), Medium (M, 2 points) or High (H, 3 points). A Cumulative Risk Rating is then calculated by summing all Risk Element values.

Risk Element #1: Climate—Host Interaction

When introduced to new areas, pests can be expected to behave as they do in their native areas if host plants and climates are similar. Ecological zonation and the interactions of the pests and their biotic and abiotic environments are considered in the element. Estimates are based on availability of both host material and suitable climate conditions. To rate this Risk Element, the U.S. "Plant Hardiness Zones" U.S. Department of Agriculture (USDA, 1990) is used (Figure 1). Due to the availability of both suitable host plants and suitable climate, the pest has potential to establish a breeding colony:

Low (1): In a single plant hardiness zone.
Medium (2): In two or three plant hardiness zones.
High (3): In four or more plant hardiness zones.

IF NONE OF THE QUARANTINE PESTS ARE CAPABLE OF BECOMING ESTABLISHED IN THE PRA AREA BECAUSE OF THE ABSENCE OF SUITABLE CLIMATES OR HOSTS, THE PRA STOPS.

Risk Element #2: Host Range

The risk posed by a plant pest depends on both its ability to establish a viable, reproductive population and its potential for causing plant damage. For arthropods, risk is assumed to be correlated positively with host range. For pathogens, risk is more complex and is assumed to depend on host range, aggressiveness, virulence and pathogenicity; for simplicity, risk is rated as a function of host range.

Low (1): Pest attacks a single species or multiple species within a single genus.
Medium (2): Pest attacks multiple species within a single plant family.
High (3): Pest attacks multiple species among multiple plant families.

Risk Element #3: Dispersal Potential

A pest may disperse after introduction to a new area. The following items are considered:

- ▸ reproductive patterns of the pest (*e.g.*, voltinism, biotic potential)
- ▸ inherent powers of movement
- ▸ factors facilitating dispersal (wind, water, presence of vectors, human, *etc*.)

Low (1): Pest has neither high reproductive potential nor rapid dispersal capability.
Medium (2): Pest has either high reproductive potential *OR* the species is capable of rapid dispersal.
High (3): Pest has high biotic potential, *e.g.*, many generations per year, many offspring per reproduction ("r-selected" species), *AND* evidence exists that the pest is capable of rapid dispersal , *e.g.*, over 10 km/year under its own

power; via natural forces, wind, water, vectors, *etc*., or human-assistance.

Risk Element #4: Economic Impact

Introduced pests are capable of causing a variety of direct and indirect economic impacts. These are divided into three primary categories (other types of impacts may occur):

- ▸ Lower yield of the host crop, *e.g.*, by causing plant mortality, or by acting as a disease vector.
- ▸ Lower value of the commodity, *e.g.*, by increasing costs of production, lowering market price, or a combination.
- ▸ Loss of foreign or domestic markets due to presence of new quarantine pest.

Low (1): Pest causes any one or none of the above impacts.
Medium (2): Pest causes any two of the above impacts.
High (3): Pest causes all three of the above impacts.

Risk Element #5: Environmental Impact (Table 4)

The assessment of the potential of each pest to cause environmental damage (Table 4) (FAO, 1995) proceeds by considering the following factors:

- ▸ Introduction of the pest is expected to cause significant, direct environmental impacts, *e.g.*, ecological disruptions, reduced biodiversity. When used within the context of the National Environmental Policy Act (NEPA) (7CFR §372), significance is qualitative and encompasses both the likelihood and severity of an environmental impact.
- ▸ Pest is expected to have direct impacts on species listed by Federal Agencies as endangered or threatened (50CFR §17.11 and §17.12), by infesting/infecting a listed plant. If the pest attacks other species within the genus or other genera within the family, and preference/no preference tests have not been conducted with the listed plant and the pest, then the plant is assumed to be a host.
- ▸ Pest is expected to have indirect impacts on species listed by Federal Agencies as endangered or threatened by disrupting sensitive, critical habitat.
- ▸ Introduction of the pest would stimulate chemical or biological control programs.

Low (1): None of the above would occur; it is assumed that introduction of a nonindigenous pest will have some environmental impact (by definition, introduction of a nonindigenous species affects biodiversity).
Medium (2): One of the above would occur.
High (3): Two or more of the above would occur.

For each pest, sum the five Risk Elements to produce a Cumulative Risk Rating. This Cumulative Risk Rating is considered to be a biological indicator of the potential of the pest to establish, spread, and cause economic and environmental impacts. The Cumulative Risk Rating should be interpreted as follows:

Low: 5 - 8 points

Medium: 9 - 12 points
High: 13 - 15 points

Table 3. Risk Rating for Consequences of Introduction: (Risk Elements #1-5)						
Pest	Risk Element 1 Climate/Host Interaction	Risk Element 2 Host Range	Risk Element 3 Dispersal Potential	Risk Element 4 Economic Impact	Risk Element 5 Environmental Impact	Cumulative Risk Rating
Pest species (Order: Family)	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (5 - 15)

Step 6. Assess Introduction Potential (Table 4)
Use Risk Element 6 to rate the potential likelihood of introduction for quarantine pests likely to follow the pathway. The cumulative score for the Likelihood of Introduction Risk Elements is referred to as the Likelihood of Introduction Risk Score.

Risk Element #6: Pest Opportunity (Survival and Access to Suitable Habitat and Hosts)

For each pest, consider six sub-elements:

1. **Quantity of commodity imported annually**: The likelihood that an exotic pest will be introduced depends on the amount of the potentially-infested commodity that is imported. For qualitative pest risk assessments, the amount of commodity imported is estimated in units of standard 40 foot long shipping containers. In those cases where the quantity of a commodity imported is provided in terms of kilograms, pounds, number of items, *etc*., convert the units into terms of 40 foot shipping containers. Score as follows:

   Low (1 point): < 10 containers/year
   Medium (2 points): 10 - 100 containers/year
   High (3points): > 100 containers/year

2. **Survive postharvest treatment**: For this sub-element, postharvest treatment refers to any manipulation, handling or specific phytosanitary treatment to which the commodity is subjected. Examples of postharvest treatments include culling, washing, chemical treatment, cold storage, etc. If there is no postharvest treatment, estimate the likelihood of this sub-element as High.

3. **Survive shipment:** Estimate survival during shipment; assume standard shipping conditions.

4. **Not be detected at the port of entry**: Unless specific protocols are in place for special

inspection of the commodity in question, assume standard inspection protocols for like commodities. If no inspection is planned, estimate this sub-element as high.

5. **Imported or moved subsequently to an area with an environment suitable for survival:** Consider the geographic location of likely markets and the proportion of the commodity that is likely to move to locations suitable for pest survival. Even if infested commodities enter the country, not all final destinations will have suitable climatic conditions for pest survival.

6. **Come into contact with host material suitable for reproduction:** Even if the final destination of infested commodities are suitable for pest survival, suitable hosts must be available in order for the pest to survive. Consider the complete host range of the pest species.

Rate sub-elements 2-6 as follows:

Low (1 point): < 0.1% (less than one in one thousand)
Medium (2 points): Between 0.1% - 10% (between one in one thousand to one in ten)
High (3 points): > 10% (greater than one in ten)

The events described in sub-elements 2 - 6 should be considered as a series of independent events that must all take place before a pest outbreak can occur, *i.e.*, the estimates for one element should not affect estimates for other elements.

For each pest, sum the six sub-elements to produce a Cumulative Risk Rating for the Likelihood of Introduction (Table 4). This Cumulative Risk Rating is considered to be an indicator of the likelihood that a particular pest would be introduced. Interpret the Cumulative Risk Rating for the Likelihood of Introduction as follows:

Low: 6 - 9 points
Medium: 10 - 14 points
High: 15 - 18 points

Table 4. Risk Rating for Likelihood of Introduction: (Risk Element #6)

Pest	Subelement 1 Quantity imported annually	Subelement 2 Survive postharvest treatment	Subelement 3 Survive shipment	Subelement 4 Not detected at port of entry	Subelement 5 Moved to suitable habitat	Subelement 6 Contact with host material	Cumulative Risk Rating
Pest species	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (1, 2, 3)	L, M, H (6 - 18)

Step 7. Conclusion/Pest Risk Potential: Pests Requiring Phytosanitary Measures (Table 5)
To estimate the Pest Risk Potential for each pest, sum the Cumulative Risk Rating for the Consequences of Introduction and the Cumulative Risk Rating for the Likelihood of Introduction (Table 5). Rate the Pest Risk Potential as follows:

Low: 11 - 18 points
Medium: 19 - 26 points
High: 27 - 33 points

Table 5. Pest Risk Potential

Pest	Consequences of Introduction Cumulative Risk Rating	Likelihood of Introduction Cumulative Risk Rating	Pest Risk Potential
Pest species	L, M, H (5 - 15)	L, M, H (6 - 18)	L, M, H (11 - 33)

Following assignment of the Pest Risk Potential for each pest, the risk assessor may comment briefly on risk management options associated with the requested commodity importations. The following guidelines are offered as an interpretation of the Low, Medium and High Pest Risk Potential ratings:

Low: Pest will typically not require specific mitigations measures; the port-of-entry inspection to which all imported commodities are subjected can be expected to provide sufficient phytosanitary security.
Medium: Specific phytosanitary measure may be necessary.
High: Specific phytosanitary measures are strongly recommended. Port-of-entry inspection is not considered sufficient to provide phytosanitary security.

Identification and selection of appropriate sanitary and phytosanitary measures to mitigate risk for pests with particular Pest Risk Potential ratings is undertaken as part of the risk management phase and is not discussed in this document. The appropriate risk management strategy for a particular pest depends on the risk posed by that pest. APHIS risk management programs are risk based and dependent on the availability of appropriate mitigation methods and are Details of APHIS risk management programs are published, primarily, in the *Federal Register* as quarantine notices.

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APPENDIX 1

GLOSSARY OF PHYTOSANITARY TERMS AND DEFINITIONS
Note: This version of the Glossary is still under consultation/comment by the various National Plant Protection Organizations and Regional Plant Protection Organizations.

Additional declaration	A statement that is required by an importing country to be entered on a phytosanitary certificate and which provides specific additional information pertinent to the phytosanitary condition of a consignment [FAO, 1990]
Antagonist*	An organism (usually pathogen) which does no significant damage to the host but its colonization of the host protects the host from significant subsequent damage by a pest [ISPM Pub. No. 3, 19961
Area	An officially defined country, part of a country or all or parts of several countries [FAO, 1990; revised FAO, 1995; CEPM, 1999; based on the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures]
Area endangered	See Endangered area
Area of low pest prevalence*	An area, whether all of a country, part of a country, or all or parts of several countries, as identified by the competent authorities, in which a specific pest occurs at low levels and which is subject to effective surveillance, control or eradication measures [IPPC, 1997]
Authority*	The National Plant Protection Organization, or other entity or person officially designated by the government to deal with matters arising from the responsibilities set forth in the Code [ISPM Pub. No. 3, 1996]
Biological control agent*	A natural enemy, antagonist or competitor, and other self-replicating biotic entity used for pest control [ISPM Pub. No. 3, 1996]

**Indicates terms with specific use*

Biological control (Biocontrol)*	Pest control strategy making use of living natural enemies, antagonists or competitors and other self-replicating biotic entities [ISPM Pub. No.3, 1996]
Biological pesticide* (Biopesticide)	A generic term, not specifically definable, but generally applied to a biological control agent, usually a pathogen, formulated and applied in a manner similar to a chemical pesticide, and normally used for the rapid reduction of a pest population for short-term pest control [ISPM Pub. No. 3, 1996]
Buffer zone*	An area in which a specific pest does not occur or occurs at a low level and is officially controlled, that either encloses or is adjacent to an infested area, an infested place of production, a pest free area, a pest free place of production or a pest free production site, and in which phytosanitary measures are taken to prevent spread of the pest [ISPM Pub. No. 10, 1999]
Bulbs and tubers	Dormant underground organs of plants intended for planting [FAO, 1990]
Certificate	An official document which attests to the phytosanitary status of any consignment affected by phytosanitary regulations [FAO, 1990]
Classical biological control*	The intentional introduction and permanent establishment of an exotic biological agent for long-term pest control [ISPM Pub. No.3, 1996]
Clearance (of a consignment)	Verification of compliance with phytosanitary regulations [FAO, 1995]
Commission*	The Commission on Phytosanitary Measures established under Article XI, [IPPC, 1997]
Commodity	A type of plant, plant product or other regulated article being moved for trade or other purpose [FAO, 1990]
Commodity class	A category of similar commodities that can be considered together in phytosanitary regulations [FAO, 1990]

Commodity pest list	A list of pests occurring in an area which may be associated with a specific commodity [CEPM, 1996]
Competitor*	An organism which competes with pests for essential elements (e.g. food, shelter) in the environment [ISPM Pub. No. 3, l996]
Compliance procedure (for a consignment)	Official procedure used to verify that a consignment complies with stated phytosanitary requirements [CEPM, 1999]
Consignment	A quantity of plants, plant products and/or other regulated articles being moved from one country to another and covered by a single phytosanitary certificate (a consignment may be composed of one or more lots) [FAO, 1990]
Consignment in transit	Consignment which passes through a country without being imported, and without being exposed in that country to contamination or infestation by pests. The consignment may not be split up, combined with other consignments or have its packaging changed [FAO, 1990; revised CEPM, 1996; CEPM 1999; formerly country of transit]
Containment	Application of phytosanitary measures in and around an infested area to prevent spread of a pest [FAO, 1995]
Contaminating pest	A pest that is carried by a commodity and, in the case of plants and plant products, does not infest those plants or plant products [CEPM, 1996; revised CEPM, 1999]
Contamination	Presence in a commodity, storage place, conveyance or container, of pests or other regulated articles, not constituting an infestation (See Infestation) [CEPM, 1997; revised CEPM, 1999]
Control (of a pest)	Suppression, containment or eradication of a pest population [FAO, 1995]

Controlled area	A regulated area which an NPPO has determined to be the minimum area necessary to prevent spread of a pest from a quarantine area [CEPM, 1996]
Country of origin (of a consignment plant products)	Country where the plants from which the plant products are derived were grown [FAO, 1990; revised CEPM, 1996; CEPM, 1999]
Country of origin (of a consignment of plants)	Country where the plants were grown [FAO, 1990; revised CEPM, 1996; CEPM, 1999]
Country of origin (of regulated articles other than plants and plant products)	Country where the regulated articles were first exposed to contamination by pests [FAO, 1990; revised CEPM, 1996; CEPM, 1999]
Country of re-export*	Country into which a consignment of plants, plant products, or other regulated articles has been imported and was stored, split up, had its packaging changed or was otherwise exposed to contamination by pests, prior to export to a third country [ISPM Pub. No. 7, l998]
Cut flowers and branches	Fresh parts of plants intended for decorative use and not for planting [FAO, 1990]
Debarking	Removal of bark from round wood (debarking does not necessarily make the wood bark-free) [FAO, 1990]
Delimiting survey	Survey conducted to establish the boundaries of an area considered to be infested by or free from a pest [FAO, 1990]
Detection survey	Survey conducted in an area to determine if pests are present [FAO, 1990, revised FAO, 1995]
Detention	Keeping a consignment in official custody or confinement for phytosanitary reasons (See Quarantine) [FAO, 1990; revised FAO, 1995; CEPM, 1999]
Dunnage	Wood used to wedge or support cargo [FAO, 1990]

Ecoarea*	An area with similar fauna, flora an climate and hence similar concerns about the introduction of biological control agents [ISPM Pub. No. 3, 1996]
Ecosystem*	A complex of organisms and their environment, interacting as a defined ecological unit (natural or modified by human activity, e.g. agroecosystem), irrespective of political boundaries [ISPM Pub. No. 3, 1996]
Endangered area	An area where ecological factors favor the establishment of a pest whose presence in the area will result in economically important loss [FAO, 1995]
Entry (of a consignment)	Movement through a point of entry into an area [FAO, 1995]
Entry (of a pest)	Movement of a pest into an area where it is not yet present, or present but not widely distributed and being officially controlled [FAO, 1995]
Equivalence	The situation of phytosanitary measures which are not identical but have the same effect [FAO, 1995; revised CEPM, 1999; based on the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures]
Eradication	Application of phytosanitary measures to eliminate a pest from as area [FAO, 1990; revised FAO, 1995; formerly Eradicate]
Establishment	Perpetuation, for the foreseeable future, of a pest within an area after entry [FAO, 1990; revised FAO, 1995; IPPC, 1997; formerly Established]
Establishment (of a biological control agent)*	The perpetuation, for the foreseeable future, of a biological control agent within an area after entry [ISPM Pub. No. 3, 1996]
Exotic*	Not native to a particular country, ecosystem or ecoarea (applied to organisms intentionally or accidently introduced as a result of human activities). As this Code is directed at the introduction of

	biological control agents from one country to another, the term “exotic” is used for organisms not native to a country [ISPM Pub. No. 3, 1996]
Field	A plot of land with defined boundaries within a place of production which a commodity is grown [FAO, 1990]
Find free	To inspect a consignment, field or place of production and consider it to be free from a specific pest [FAO, 1990]
Free from (of a consignment, field or place of production)	Without pests (or a specific pest) in numbers or quantities that can be detected by the application of phytosanitary procedures [FAO, 1990; revised FAO, 1995; CEPM, 1999]
Fresh	Living; not dried, deep-frozen or otherwise conserved [FAO, 1990]
Fruits and vegetables	Fresh parts of plants intended for consumption or processing [FAO, 1990]
Fumigation	Treatment with a chemical agent that reaches the commodity wholly or primarily in a gaseous state [FAO, 1990; revised FAO, 1995]
Germplasm	Plants intended for use in breeding or conservation programs [FAO, 1990]
Grain	Seeds intended for processing or consumption and not for planting (See Seeds) [FAO, 1990]
Growing medium	Any material in which plans roofs are growing or intended for that purpose [FAO, 1990]
Growing season	Period of the year when plants will actively grow in an area [FAO, 1990]
Harmonization	The establishment, recognition and application by different countries of phytosanitary measures based on common standards [FAO, 1995; revised CEPM, 1999; based on the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures]
Harmonized phytosanitary measures*	Phytosanitary measures established by contracting

	parties to the IPPC, based on international standards [IPPC, 1997]
Hitch-hiker pest	See Contaminating pest
Host pest list	A list of pests that infest a plant species, globally or in an area [CEPM, 1996; revised CEPM, 1999]
Host range	Species of plants capable, under natural conditions, of sustaining a specific pest [FAO, 1990]
Import permit	Official document authorizing importation of a commodity in accordance with specified phytosanitary requirements [FAO, 1990; revised FAO, 1995]+
Import permit (of a biological control agent)*	An official document authorizing importation (of a biological control agent) in accordance with specified requirements [ISPM Pub. No. 3, 1996]
Infestation (of a commodity)	Presence in a commodity of a living pest of the plant or plant product concerned. Infestation includes infection [CEPM, 1997; revised CEPM, 1999]
Inspection	Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to determine compliance with phytosanitary regulations [FAO, 1990; revised FAO, 1995; formerly Inspect]
Inspector	Person authorized by a National Plant Protection Organization to discharge its functions [FAO, 1990]
Interception (of a consignment)	The refusal or controlled entry of an imported consignment due to failure to comply with phytosanitary regulations [FAO, 1990; revised FAO, 1995]
Interception (of a pest)	The detection of a pest during inspection or testing of an imported consignment [FAO, 1990; revised CEPM, 1996]
Intermediate quarantine	Quarantine in a country other then the country of origin or destination [CEPM, 1996]

International Plant Protection Convention	International Plant Protection Convention as deposited with FAO in Rome in 1951 and as subsequently amended [FAO, 1990]
International Standard for Phytosanitary Measures	An international standard adopted by the Conference of FAO, the Interim Commission on Phytosanitary Measures or the Commission on Phytosanitary Measures, established under the IPPC [CEPM, 1996; revised CEPM, 1999]
International standards*	International standards established in accordance with Article X paragraph 1 and 2 of the IPPC [IPPC, 1997]
Introduction	The entry of a pest resulting in its establishment [FAO, 1990; revised FAO, 1995; IPC, 1997]
Introduction (of a biological control agent)*	The release of a biological control agent into an ecosystem where it did not exist previously (see also "establishment") [ISPM Pub. No. 3, 1996]
Inundative release*	The release of overwhelming numbers of a mass-produced, invertebrate biological control agent in the expectation of achieving a rapid reduction of a pest population without necessarily achieving continuing impact [ISPM Pub. No. 3, 1996]
IPPC	Acronym for the International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended [FAO, 1990]
ISPM	Acronym for International Standard for Phytosanitary Measures [CEPM, 1996]
Legislation*	Any act, law, regulation, guideline or other administrative order promulgated by a government [ISPM Pub. No. 3, 1996]
Lot	A number of units of a single commodity, identifiable by its homogeneity of composition, origin etc., forming part of a consignment [FAO, 1990]

Micro-organism*	A protozoan, fungus, bacterium, virus or other microscopic self-replicating biotic entity [ISPM Pub. No. 3, 1996]
Monitoring	An official ongoing process to verify phytosanitary situations [CEPM,1996]
Monitoring survey	Ongoing survey to verify the characteristics of a pest population [FAO, 1995
National Plant Protection Organization	Official service established by a government to discharge the functions specified by the IPPC [FAO, 1990; formerly Plant Protection Organization (National)
Natural enemy*	An organism which lives at the expense of another organism and which may help to limit the population of its host. This includes parasitoids, parasites, predators and pathogens [ISPM Pub. No. 3, 1996]
Naturally occurring*	A component of an ecosystem or a selection from a wild population, not altered by artificial means [ISPM Pub. No. 3, 1996]
Non-quarantine pest	Pest that is not a quarantine pest for an area [FAO, 1995]
NPPO	Acronym for National Plant Protection Organization [FAO, 1990]
Occurrence	The presence in an area of a pest officially reported to be indigenous or introduced and/or not officially reported to have been eradicated [FAO, 1990; revised FAO, 1995; formerly Occur]
Official	Established, authorized or performed by a National Plant Protection Organization [FAO, 1990]
Organism*	Biotic entity capable of reproduction or replication, vertebrate or invertebrate animals, plants and micro-organisms [ISPM Pub. No. 3, 1996]
Outbreak	An isolated pest population, recently detected and expected to survive for the immediate future [FAO, 1995]
Parasite *	An organism which lives on or in a larger organism,

	feeding upon it [ISPM Pub. No. 3, 1996]
Parasitoid*	An insect parasitic only in its immature stages, killing its host in the process of its development, and free living as an adult [ISPM Pub. No. 3, 1996]
Pathogen*	Micro-organism causing disease [ISPM Pub. No. 3, 1996]
Pathway	Any means that allows the entry or spread of a pest [FAO, 1990; revised FAO 1995]
Pest	Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products [FAO, 1990; revised FAO, 1995; IPPC, 1997]
Pest free area	An area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained [FAO, 1995]
Pest free place of production*	Place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which where appropriate, this condition is being officially maintained for a defined period [ISPM Pub. No. 10, 1999]
Pest free production site*	A defined portion of a place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being maintained for a defined period and that is managed as a separate unit in the same way as a pest free place of production [ISPM Pub. No. 10, 1999]
Pest record	A document providing information concerning the presence or absence of a specific pest at a particular location at a certain time, within an area (usually a country) under described circumstances [CEPM, 1997]
Pest risk analysis	The process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and the strength

	of any phytosanitary measures to be taken against it [FAO, 1995; revised IPPC, 1997]
Pest risk assessment	Determination of whether a pest is a quarantine pest and evaluation of its introduction potential [FAO, 1995]
Pest risk management	The decision-making process of reducing the risk of introduction of a quarantine pest [FAO,1995]
Pest status (in an area)	Presence or absence, at the present time, of a pest in an area, including where appropriate it distribution, as officially determined using expert judgement on the basis of current and historical pest records and other information [CEPM, 1997; revised ISPM, 1998]
PRA	Acronym for pest-free area [FAO, 1995]
Phytosanitary certificate	Certificate patterned after the model certificates of the IPPC [FAO, 1990]
Phytosanitary certification	Use of phytosanitary procedures leading to the issue of a phytosanitary certificate [FAO, 1990]
Phytosanitary legislation	Basic laws granting legal authority to a National Plant Protection Organization from which phytosanitary regulations may be drafted [FAO, 1990; revised FAO, 1995]
Phytosanitary measure	Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of pests [FAO, 1995; revised IPPC, 1997]
Phytosanitary procedure	Any officially prescribed method for performing inspections, tests, surveys or treatments in connection with regulated pests [FAO, 1990; revised FAO, 1995; CEPM, 1999]
Phytosanitary regulation	Official rule to prevent the introduction and/or spread of pests, by regulating the production, movement or existence of commodities or other articles, or the normal activity of persons, and by establishing procedures for phytosanitary

	certification [FAO, 1990; revised FAO, 1995; CEPM, 1999]
Place of production	Any premises or collection of fields operated as a single production or farming unit. This may include production sites which are separately managed for phytosanitary purposes [FAO, 1990; revised CEPM, 1999]
Plating (including replanting)	Any operation for the placing of plants in a growing medium, or by grafting or similar operations, to ensure their subsequent growth, reproduction or propagation [FAO, 1990; revised CEPM, 1999]
Plant pest	See Pest
Plant products	Unmanufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create a risk for the introduction and spread of pests [FAO, 1990; revised IPPC, 1997; formerly Plant product]
Plant protection organization (national)	See National Plant Protection Organization
Plant quarantine	All activities designed to prevent the introduction and/or spread of quarantine pests or to ensure their official control [FAO, 1990; revised FAO, 1995]
Plants	Living plants and parts thereof, including seeds and germplasm [FAO, 1990; revised IPPC, 1997]
Plants for planting	Plants intended to remain planted, to be planted or replanted [FAO, 1990]
Plants in tissue culture	Plants in an aseptic medium in a closed container [FAO, 1990; revised CEPM, 1999]
Point of entry	Airport, seaport or land border officially designated for the importation of consignments, and/or entrance of passengers [FAO, 1995]

Post-entry quarantine	Quarantine applied to a consignment after entry [FAO, 1995]
PRA	Acronym for pest risk analysis [FAO, 1995]
PRA area	Area in relation to which a pest risk analysis is conducted [FAO, 1995]
Practically free	Of a consignment, field, or place of production, without pests (or a specific pest) in numbers or quantities in excess of those that can be expected to result from, an be consistent with good cultural and handling practices employed in the production and marketing of the commodity [FAO, 1990; revised FAO, 1995]
Preclearance	Phytosanitary certification and/or clearance in the country of origin, performed by or under the regular supervision of the National Plant Protection Organization of the country of destination [FAO, 1990; revised FAO, 1995]
Predator*	A natural enemy that preys and feeds on other animal organisms, more than one of which are killed during its lifetime [ISPM Pub. No. 3, 1996]
Prohibition	A phytosanitary regulation forbidding the importation or movement of specified pests or commodities [FAO, 1990; revised FAO, 1995]
Protected area	A regulated area which an NPPO has determined to be the minimum area necessary for the effective protection of an endangered area [FAO, 1990; omitted from FAO, 1995; new concept from CEPM, 1996]
Quarantine	Official confinement of regulated articles for observation and research of for further inspection, testing and/or treatment [FAO, 1990; revised FAO, 1995; CEPM, 1999]
Quarantine area	An area within which a quarantine pest is present and is being officially controlled [FAO, 1990; revised FAO, 1995]

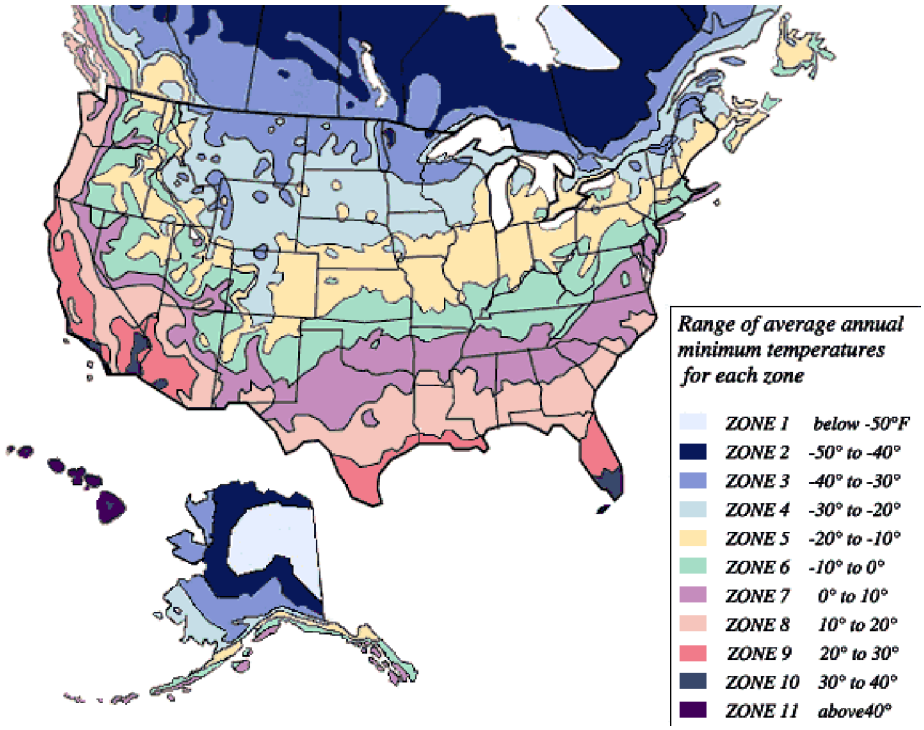
Quarantine (of a biological control agent)*	Official confinement of biological control agents subject to phytosanitary regulations for observation and research, or for further inspection and/or testing [ISPM Pub. No. 3, 1996]
Quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled [FAO, 1990; revised FAO, 1995; IPPC, 1997]
Quarantine station	Official station for holding plants or plant products in quarantine [FAO, 1990; revised FAO, 1995; formerly Quarantine station or facility]
Re-exported consignment	Consignment which has been imported into a country from which it is then exported without being exposed to infestation or contamination by pests. The consignment may be stored, split up, combined with other consignments or have its packaging changed [FAO, 1990; revised CEPM, 1996; CEPM, 1999]
Refusal	Forbidding entry of a consignment or other regulated article when it fails to comply with phytosanitary regulations [FAO, 1990; revised FAO, 1995]
Region	The combined territories of the member countries of a Regional Plant Protection Organization [FAO, 1990]
Regional Plant Protection Organization	An intergovernmental organization with the functions laid down by Article IX of the IPPC [FAO, 1990; revised FAO, 1995; CEPM, 1999; formerly Plant Protection Organization (Regional)]
Regional standards	Standards established by a regional plant protection organization for the guidance of the members of that organization [IPPC, 1997]
Regulated area	An area into which, within which and/or from which plants, plant products and other regulated articles are subjected to phytosanitary measures in order to prevent the introduction and/or spread of regulated

	pests (See Controlled area and Protected area) [CEPM, 1996; revised CEPM, 1999]
Regulated article	Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harboring or spreading pests, deemed to requite phytosanitary measures, particularly where international transportation is involved [FAO, 1990; revised FAO, 1995; lPPC, 1997]
Regulated non-quarantine pest	A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party [IPPC, 1997]
Regulated pest	A quarantine pest or a regulated non-quarantine pest [IPPC, 1997]
Release (Into the environment)*	Intentional liberation of an organism into the environment (see also “introduction” and “establishment”) [ISPM Pub. No. 3, 1996]
Release (of a consignment)	Authorization for entry after clearance [FAO, 1995]
Replanting	See Planting
Restriction	A phytosanitary regulation allowing the importation or movement of specified commodities subject to specific requirements [CEPM, 1996, revised CEPM, 1999]
Round wood	Wood not sawn longitudinally, carrying its natural rounded surface, with or without bark [FAO, 1990]
RPPO	Acronym for Regional Plant Protection Organization [FAO, 1990]
Sawn wood	Wood sawn longitudinally, with or without its natural rounded surface with or without bark [FAO, 1990]

Secretary*	Secretary of the Commission appointed pursuant to Article X11 [IPPC, 1997]
Seeds	Seeds for planting not for consumption or processing (see Grain) [FAO, 1990]
Specificity*	A measure of the host range of a biological control agent on a scale ranging from an extreme specialist only able to complete development on a single species or strain of its host (monophagous) to a generalist with many hosts ranging over several groups of organisms (polyphagous) [ISPM Pub. No. 3, 1996]
Spread	Expansion of the geographical distribution of a pest within an area [FAO, 1995]
Standard	Document established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context [FAO, 1995; ISO/IEC GUIDE 2:1991 definition]
Stored product	Unmanufactured plant product intended for consumption or processing, stored in a dried form (this includes in particular grain and dried fruits and vegetables) [FAO, 1990]
Suppression	The application of phytosanitary measures in an infested area to reduce pest populations [FAO, 1995; revised CEPM, 1999]
Surveillance	An official process which collects and records data on pest occurrence or absence by survey, monitoring or other procedures [CEPM, 1996]
Survey	An official procedure conducted over a defined period of time to determine the characteristics of a pest population or to determine which species occur in an area [FAO, 1990; revised CEPM, 1996]
Technically justified	Justified on the basis of conclusions reached by using an appropriate pest risk analysis or, where applicable, another comparable examination and

	evaluation of available scientific information [IPPC, 1997]
Test	Official examination, other than visual, to determine if pests are present or to identify pests [FAO, 1990]
Tissue culture	See Plants in tissue culture
Transience*	Presence of a pest that is not expected to lead to establishment [ISPM Pub. No. 8, 1998]
Transit	See Consignment in transit
Transparency	The principle of making available, at the international level, phytosanitary measures and their rationale [FAO, 1995; revised CEPM, 1999; based on the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures]
Treatment	Officially authorized procedure for the killing, removal or rendering infertile of pests [FAO, 1990, revised FAO, 1995]
Wood	Round wood, sawn wood, wood chips or dunnage, with or without bark [FAO, 1990]

Figure 1: Climatic Zones Map (USDA, 1990).



Attachment II

Peer Review Performance Standards

(1.) At least three peer reviewers should be chosen by the contractor to confidentially evaluate the technical merits of the risk assessment.

(2.) Peer reviewers should not participate during the development of the risk assessment.

(3.) Peer reviewers should not have a vested interest in the outcome of the risk assessment.

(4.) Peer reviewers should be able to determine whether the risk assessment adequately addressed the standards described in Attachment I.

(8.) Peer reviewers should be able to determine whether the best available data and most appropriate methods of analysis were used in the risk assessment.

(9.) Peer reviewers should complete their review within the time period specified by the Contractor and APHIS/PPQ[1].

(10.) Peer reviewers should be able to complete an unbiased review of the risk assessment.

(11.) Peer reviewers may consult with other non-APHIS experts providing the risk assessment does not contain Confidential Business Information, unless the Contractor who conducted the risk assessment and APHIS/PPQ agree to it.

(12.) Peer reviewers should conform to the Contractor's and APHIS/PPQ specified terms.

(13.) Peer reviewers should be selected based on their being broadly representative and balanced to the extent feasible.

(14.) Peer reviewers should provide a list of any considerations which were not adequately taken into account in the risk assessment.

(15.) Peer reviewers should not reveal any of the content or recommendations of the review to other parties except as necessary to conduct an objective review as addressed above.

[1] Animal and Plant Health Inspection Service/Plant Protection and Quarantine.

Importation of Grapes, *Vitis* spp., from Korea into the United States

A Qualitative, Pathway-Initiated Pest Risk Assessment

Commodity Risk Assessment Staff
Plant Protection and Quarantine
Animal and Plant Health Inspection Service
United States Department of Agriculture
4700 River Road, Unit 133
Riverdale, MD 20737-1236
(301) 734-7853

Prepared by:
David A. Hanken

March, 2000

Table of Contents

A. Introduction

The Animal and Plant Health Inspection Service (APHIS) of the United States Department of Agriculture (USDA) prepared this pest risk assessment to examine plant pest risks associated with the importation into the United States of **fresh grapes (*Vitis* spp.) grown in Korea**. This is a qualitative pest risk assessment in which estimates of risk are expressed in qualitative terms such as high or low rather than in numerical terms such as probabilities or frequencies. The details of methodology and rating criteria can be found in: Pathway-Initiated Pest Risk Assessment: Guidelines for Qualitative Assessments, version 5.0 (USDA, 2000), available at the address named on the front of this document.

International plant protection organizations such as the North American Plant Protection Organization (NAPPO) and the International Plant Protection Convention (IPPC) of the United Nations Food and Agriculture Organization (FAO) provide guidance for conducting pest risk analyses. The methods used to initiate, conduct, and report this pest risk assessment are consistent with guidelines provided by NAPPO, IPPC and FAO. The use of biological and phytosanitary terms conforms with the NAPPO Compendium of Phytosanitary Terms (Hopper, 1996) and the Definitions and Abbreviations (Introduction Section) in International Standards for Phytosanitary Measures, Section 1—Import Regulations: Guidelines for Pest Risk Analysis (FAO 1996).

B. Risk Assessment

1. Initiating Event: Proposed Action

This pest risk assessment is commodity-based, and therefore "pathway-initiated." The assessment is in response to a request for USDA authorization to allow imports of a particular commodity presenting a potential plant pest risk. In this case, the importation into the United States of **fresh grapes (*Vitis* spp.) grown in Korea** is a potential pathway for introduction of plant pests. Title 7 of the Code of Federal Regulations 319, Part 56 (7CFR §319.56) provides regulatory authority for the importation of fruits and vegetables from foreign sources into the United States.

2. Assessment of Weediness Potential of Grape, *Vitis* spp.

The results of the weediness screening for *Vitis vinifera* (Table 1) did not prompt a pest-initiated risk assessment.

Table 1: Process for Determining Weediness Potential of Commodity

Commodity: *Vitis vinifera* L. (Vitaceae) Cultivated grape.

Phase 1: *Vitis vinifera* L. is widely cultivated in the United States.

Phase 2: Is the genus or species or subspecies or variety listed as a weed in:

NO	Geographical Atlas of World Weeds (Holm *et al.*, 1979) or World Weeds: Natural Histories and Distribution. (Holm *et al.*, 1997)
NO	World's Worst Weeds (Holm *et al.*, 1977)
NO	Report of the Technical Committee to Evaluate Noxious Weeds; Exotic Weeds for Federal Noxious Weed (Gunn and Ritchie, 1982)
NO	Economically Important Foreign Weeds (Reed, 1977)
Yes*	Weed Science Society of America list (WSSA, 1989)
NO	Is there any literature reference indicating weediness (*e.g.*, AGRICOLA, CAB, Biological Abstracts, AGRIS; search on "species name" combined with "weed").

Phase 3: Conclusion: Certain species of *Vitis* have been reported as weeds (WSSA, 1989). However, as *Vitis* is widely cultivated in the United States, additional imports would be unlikely to pose a weed risk.

* already widespread.

3. Previous Risk Assessments, Current Status and Pest Interceptions
Decision History for *Vitis* spp.:

1958 - Korea: Denied entry to California and North Pacific because of an absence of Korean Grape diseases and an appreciable risk of serious pests hitch-hiking with the commodity.
1973 - Korea: Denied entry into Hawaii because of insects of economic importance occurring in Korea.

Interceptions from Korea for FY 1985-99 for Grapes:

Origin	Pest	Host listed	# of Times Intercepted
Korea	Cerambycidae, species of	Vitis spp.	3

4. Pest Categorization - Identification of Quarantine Pests and Quarantine Pests Likely to Follow the Pathway

Table 2 shows the pest list for *Vitis* spp. from Korea. The tables were developed after a review of some of the information sources listed in USDA (2000). The list summarizes information on the distribution of each pest, pest-commodity association, and regulatory history.

Table 2: Arthropod Pests of *Vitis* spp. in Korea

Pest	Geographic Distribution[0]	Plant Part Affected	Quarantine Pest	Likely to Follow Pathway	References
Aboridia apicalis (Nawa) (Homoptera: Cicadellidae)	KO	L	Y	N	Hong, 1995; Metcalf, 1968
Acosmeryx naga (Moor) (Lepidoptera: Sphingidae)	KO	L	Y	N	Anon, 1986
Acronicta rumicis (L.) (Lepidoptera: Noctuidae)	KO	L	Y	N	Hong, 1995; Lee, *et al.*, 1970; Poole, 1989
Acrothinium gaschevitchii (Motshulsky) (Coleoptera:Chrysomelidae)	KO	L	Y	N	Hong, 1995
Adoretus sinicus Burmeister (Coleoptera: Scarabaeidae)	KO	L	Y_n	N	APPPC, 1987; CPC, 1999; EPPO, 1999
Adoretus tenuimaculatus Waterhouse (Coleoptera: Scarabaeidae)	KO	L	Y	N	Hong, 1995; Kim, *et al*, 1986; Shiraki, 1952
Adris tyrannus amurensis Staudinger (Lepidoptera: Noctuidae)	KO	F_a	Y	N_1	Hong, 1995; Lee, *et al.*, 1970; Pittaway, 1995; Zhang, 1994
Agrius convolvuli (L.) (Lepidoptera: Sphingidae)	KO	L	Y_n	N	Chu and Wang, 1980; Hong, 1995
Agrotis ipsilon (Hufnagel) (Lepidoptera: Noctuidae)	KO, US	F_a, W	N_c	N_1	CIE, 1969; CPC, 1999; Lee *et al*., 1970; Zhang, 1994
Agrotis segetum Denis & Schiffermuller (Lepidoptera: Noctuidae)	KO	S	Y	N	CPC, 1999; Zhang, 1994
Aleurocanthus spiniferus (Quaintance) (Homoptera: Aleyrodidae)	KO, US (HI)	L, S	Y_n	N	CIE 112; EPPO, 1999; Hong, 1995; PNKTO, Shiraki, 1952
Ambrosiodmus rubricollis (Eichoff) (Coleoptera: Scolytidae)	KO, US	W	N	N	Choo, *et al.*, 1983; Wood, 1982

Ampelophaga rubiginosa Bremer & Grey (Lepidoptera: Sphingidae)	KO	L	Y_n	N	Clausen, 1931; Hong, 1995; Kim *et al*., 1982
Amphipyra erebina Butler (Lepidoptera: Noctuidae)	KO	L	Y	N	Hong, 1995; Poole, 1989
Amphipyra livida Denis & Schiffermuller (Lepidoptera: Noctuidae)	KO	F_a, L	Y	N_1*	Hong, 1995; Poole, 1989; Yoon and Lee, 1974; Zhang, 1994
Amphipyra pyramidea (L.) (Lepidoptera: Noctuidae)	KO	L	Y_n	N	Hong, 1995; Poole, 1989; Zhang, 1994
Anomala cuprea Hope (Coleoptera: Scarabaeidae)	KO	L, R	Y	N	Akutsu, 1991; Anon, 1986; Fujiyama, *et al*, 1983; Hong, 1995; Yoshida, *et al.*, 1979
Anomala geniculata Motschulsky (Coleoptera: Scarabaeidae)	KO	L, R	Y	N	Hong, 1995; Tanaka, 1979
Anomala japonica Arrow (Coleoptera: Scarabaeidae)	KO	L, R	Y	N	Hong, 1995
Anomala luculenta Erichson (Coleoptera: Scarabaeidae)	KO	L, R	Y	N	Hong, 1995
Anomala octiescostata Burmeister (Coleoptera:Scarabaeidae)	KO	L, R	Y	N	Anon, 1986
Anomala orientalis (Waterhouse) (Coleoptera: Scarabaeidae)	KO , eUS	L, R	N_c	N	EPPO, 1999; FAO, 1954; Hong, 1995; Metcalf and Metcalf, 1993
Aphis fabae Scopoli (Homoptera: Aphididae)	KO, US	L, W	N_c	Y	CIE, 1963; CPC, 1999
Aphis gossypii Glover (Homoptera: Aphididae)	KO, US	L, S, W	N_c	Y	APPPC, 1987; CPC, 1999; Hill, 1987
Aphis spiraecola Patch (Homoptera: Aphididae)	KO, US	F, W	N_c	Y	Cho, *et al.*, 1997; CPC, 1999
Aphrophora intermedia Uhler (Homoptera: Cercopidae)	KO	L	Y	N	Clausen, 1931; Hong, 1995; Shiraki, 1952
Arboridia apicalis (Nawa) (Homoptera: Cicadellidae)	KO	L	Y	N	Hong, 1995

Arcte coerula Guenee (Lepidoptera: Noctuidae)	KO	F_a, L	Y_n	N_1	Hattori, 1969; Hong, 1995; Poole, 1989; Yoon and Lee, 1974; Zhang, 1994
Artena dotata (F.) (Lepidoptera: Noctuidae)	KO	F_a	Y_n	N_1	Danziger, 1982; Hattori, 1969; Poole, 1989; Yoon and Lee, 1974; Zhang, 1994
Ascomeryx naga (Moore) (Lepidoptera: Sphingidae)	KO	L	Y	N	Hong, 1995
Aspidobyctiscus lacunipennis (Jekel) (Coleoptera: Attelabidae)	KO	L	Y	N	Clausen, 1931; Hong, 1995; Shiraki, 1952
Asteropetes noctuina (Butler) (Lepidoptera: Noctuidae)	KO	L	Y	N	Hong, 1995; Poole, 1989
Bambalina spp. (Lepidoptera: Psychidae)	KO	L, S	Y	N	Anon, 1986
Basilepta fulvipes (Mutschulsky) (Coleoptera:Chrysomelidae)	KO	L	Y	N	Hong, 1995
Batracomorphus mundus (Uhler) (Homoptera:Cicadellidae)	KO	L	Y	N	Hong, 1995; Metcalf, 1968
Bothrogonia japonica Ishihara (Homoptera: Cicadellidae)	KO	L	Y_n	N	Hong, 1995; Kwon, 1968; Lee and Kwon, 1982; Shiraki, 1952
Brachyclytus singularis Kraatz (Coleoptera: Cerambycidae)	KO	S	Y	N	Hong, 1995
Bromius obscurus (L.) (Coleoptera:Chrysomelidae)	US KO	L	N	N	Anon, 1986; Hong, 1995; Metcalf and Metcalf, 1993
Bryobia praetiosa Koch (Acarina: Tetranychidae)	US KO	L, S	N_c	N	Hong, 1995; Jeppson, *et al.*, 1975
Callygris compositata (Guenee) (Lepidoptera: Geometridae)	KO	L	Y	N	Hong, 1995
Calyptra lata (Butler) (Lepidoptera: Noctuidae)	KO	F_a, L	Y	N_1	Danziger, 1983; Hong, 1995; Lee, *et al.*, 1970; Zhang, 1994

Calyptra thalictri (Borkhausen) (Lepidoptera: Noctuidae)	KO	F_a, L	Y	N_1	Danziger, 1983; Hong, 1995; Lee, *et al.*, 1970; Poole, 1989
Catocala duplicata Butler (Lepidoptera: Noctuidae)	KO	L	Y	N	Hong, 1995; Poole, 1989
Catocala fulminea Scopoli (Lepidoptera: Noctuidae)	KO	L	Y	N	Hong, 1995; Poole, 1989
Catocala praegnax Walker (Lepidoptera: Noctuidae)	KO	L	Y	N	Anon, 1986; Poole, 1989
Cerambycidae, spp. of (Coleoptera: Cerambycidae)	KO	S	Y	N	PPQ Interceptions
Chlorophorus annularis (F.) (Coleoptera: Cerambycidae)	KO	S	Y_n	N	Duffy, 1968; Hong, 1995; Shiraki, 1952
Coccus hesperidum (L.) (Homoptera: Coccidae)	KO, US	F	N_c	Y	Gill, *et al.*, 1977; Hong, 1995;
Conogethes punctiferalis (Guenee) (Lepidoptera: Pyralidae)	KO	F, L, S	Y_n	Y	CPC, 1999; Pierce, 1917; Yang, 1990
Craponius inaequalis Say (Coleoptera: Curculionidae)	KO, US	F	N	Y	Anon, 1986; Hill, 1997; Hong, 1995; O'Brien and Wibmer, 1982
Deilephila elpenor (L.) (Lepidoptera: Sphingidae)	KO	L	Y	N	Hong, 1995; Zhang, 1994
Deuterocopus albipunctatus Fletcher (Lepidoptera: Pterophoridae)	KO	L	Y	N	Hong, 1995; Shiraki, 1952
Drosophila melanogaster Meigen (Diptera: Drosophilidae)	KO, US	F	N_c	Y	CPC, 1999
Drosophila simulans Sturtevant (Diptera: Drosophilidae)	KO, US	F	N_c	Y	CPC, 1999
Drosophila suzukii Matsumura (Diptera: Drosophilidae)	KO, US (HI)	F	N_c	Y	CPC, 1999; Hong, 1995
Dysgonia maturata (Walker) (Lepidoptera: Noctuidae)	KO	L	Y	N	Danziger, 1982; Hong, 1995; Poole, 1989; Yoon and Lee, 1974

Empoasca vitis (Gothe) (Homoptera: Cicadellidae)	KO	L	Y	N	Anon, 1986; Cerutti, *et al*., 1990; Hong, 1995; Kwon, 1983; Tevella and Arzone, 1989
Endoclyta excrescens (Butler) (Lepidoptera: Hepialidae)	KO	S	Y_n	N	Hong, 1995
Epiacanthus stramineus (Motschulsky) (Homoptera: Cicadellidae)	KO	L	Y	N	Hong, 1995; Metcalf, 1968; Syoziro, *et al*., 1965
Eudocima fullonia Clerck (Lepidoptera: Noctuidae)	KO, US (HI)	F_a	Y	N_1	Clausen, 1931; Danziger, 1982; Hong, 1995; Poole, 1989; Shiraki, 1952; Yoon and Lee, 1974
Eudocima tyrannus Guenee (Lepidoptera: Noctuidae)	KO	F_a	Y	N_1	Danziger, 1982; Hong, 1995; Kim and Lee, 1986; Poole, 1989; Shiraki, 1952; Zhang, 1994
Eulecanium kunoense (Kuwana) (Homoptera: Coccidae)	KO	S	Y_n	N_2	Hong, 1995
Eulithis ledereri (Bremer) (Lepidoptera: Geometridae)	KO	L	Y	N	Hong, 1995
Eupoecilia ambiguella Hubner (Lepidoptera: Tortricidae)	KO	F	Y_n	Y	Anon, 1994; CIE Map #76; EPPO, 1999; Helle, 1991; Pierce, 1917; Zhang, 1994
Euproctis piperita Oberthur (Lepidoptera: Lymantriidae)	KO	L	Y	N	Hong, 1995; Lee, *et al*., 1992
Euproctis similis (Fuessly) (Lepidoptera: Lymantriidae)	KO	L, S	Y_n	N	Anon, 1986; Carter, 1984; Ferguson, *et al*., 1978; Hodges, 1983; Shiraki, 1952
Everes argiades (Pallas) (Lepidoptera: Lycaenidae)	KO	L	Y	N	Hong, 1995
Frankliniella occidentalis Pergande (Thysanoptera: Thripidae)	KO, US	F, L	N_c	N	CPC, 1999; EPPO, 1999; Lewis, 1997; Nakahara, 1997

Glycyphana fulvistemma Motschulsky (Coleoptera: Scarabaeidae)	KO, US	L	N	N	Hong, 1995; Shiraki, 1952
Graptopsaltria nigrofuscata (Motschulsky) (Homoptera:Cicadidae)	KO	R, S	Y	N	Hong, 1995; Metcalf, 1968
Gryllotalpa africana Palisot de Beauvois (Orthoptera: Gryllotalpidae)	KO	R, S	Y	N	Anon, 1986; CIE Map. No. 293; Clausen, 1931; PNKTO
Heliothrips haemorrhoidalis Bouche (Homoptera: Thripidae)	KO, US	L	N_c	N	Bailey, 1957; Hong, 1995
Hemiberlesia lataniae (Signoret) (Homoptera: Diaspididae)	KO, US	S	N_c	N	Hong, 1995; Nakahara, 1982
Herpetogramma luctuosalis (Guenee) (Lepidoptera: Pyralidae)	KO	L	Y	N	Hong, 1995; Shiraki, 1952
Hippotion celerio L. (Lepidoptera: Sphingidae)	KO	L	Y	N	CPC, 1999; Flaherty, *et al*., 1992; Zhang, 1994
Holochlora japonica Brunner von Watternwyl (Orthoptera: Tettigoniidae)	KO	L	Y_n	N	Hong, 1995; Syoziro, *et al*., 1965
Hyphantria cunea (Drury) (Lepidoptera: Arctiidae)	KO, US	L	N_c	N	Hong, 1995; Metcalf and Metcalf, 1993; Zhang, 1994
Hypothenemus eruditus Westwood (Coleoptera: Scolytidae)	KO, US	S	N	N	Hong, 1995; Wood, 1982
Icerya purchasi (Maskell) (Homoptera: Margarodidae)	KO, US	L	N_c	N	Gill, 1993; Hong, 1995
Illiberis tenuis (Butler) (Lepidoptera: Zygaenidae)	KO	L	Y	N	Hong, 1995
Kolla atramentaria (Motschulsky) (Homoptera: Cicadellidae)	KO	L	Y	N	Hong, 1995; Kwon, 1983
Lagoptera juno (Dalman) (Lepidoptera: Noctuidae)	KO	F_a	Y_n	N_1	Anon, 1986; Danziger, 1982; Kim and Lee,1986; Poole, 1989; Zhang, 1994

Ledra auditura Walker (Homoptera: Cicadellidae)	KO	L	Y	N	Hong, 1995; Metcalf, 1968; Syoziro, *et al*., 1965
Lepidosaphes tubulorum Ferris (Homoptera: Diaspididae)	KO	S	Y_n	N_2	Clausen, 1931; Hong, 1995; Shiraki, 1952
Lygocoris lucorum Meyer (Homoptera: Miridae)	KO	L	Y	N	Hong, 1995
Machaerotypus sibricus (Lethierry) (Homoptera: Membracidae)	KO	L	Y	N	Hong, 1995; Metcalf and Wade, 1965
Macrosiphum euphorbiae (Thomas) (Homoptera: Aphididae)	KO, US	L, S	N_c	N	CIE Map No. 44; CPC, 1999; Hill, 1987
Mamestra brassicae (L.) (Lepidoptera: Noctuidae)	KO	F, L, W	Y_n	N	CPC, 1999; EPPO, 1999; Zhang, 1994
Melanotus erythropygus Candeze (Coleoptera: Elateridae)	KO	R	Y	N	Hong, 1995
Metopta rectifasciata (Menetries) (Lepidoptera: Noctuidae)	KO	F_a	Y	N_1	Anon, 1986; Poole, 1989; Yoon and Lee, 1974; Zhang, 1994
Mimela fusania Bates (Coleoptera: Scarabaeidae)	KO	L	Y	N	Hong, 1995
Miridiba coreana Mijima & Kinoshita (Coleoptera: Scarabaeidae)	KO	L	Y	N	Anon, 1986; Brodell, 1999
Mythimna turca (L.) (Lepidoptera: Noctuidae)	KO	F_a, L	Y_n	N_1	Danziger, 1982; Hong, 1995; Poole, 1989; Yoon and Lee, 1974; Zhang, 1994
Nippoptilia vitis (Sasaki) (Lepidoptera:Pterophoridae)	KO	F, L, S	Y	Y	Clausen, 1931; Hong, 1995; Shiraki, 1952; Takahashi, 1915
Oecanthus longicauda Matsumura (Orthoptera: Gryllidae)	KO	W	Y	N	Anon, 1986
Ophiusa tirhaca (Cramer) (Lepidoptera: Noctuidae)	KO	F_a	Y	N_1	Anon, 1986; Danziger, 1982; Poole, 1989; Yoon and Lee, 1974; Zhang, 1994

Oraesia emarginata F. (Lepidoptera: Noctuidae)	KO	F_a, L	Y	N_1	Danziger, 1982; Hong, 1995: Kim and Lee, 1986; Poole, 1989; Zhang, 1994
Oraesia excavata Butler (Lepidoptera: Noctuidae)	KO	F_a, L	Y	N_1	Hong, 1995; Kim and Lee, 1986; Poole, 1989; Zhang, 1994
Orthobelus flavipes Uhler (Homoptera: Membracidae)	KO	L, S	Y	N	Hong, 1995; Metcalf and Wade, 1965
Panonychus citri McGregor (Acarina: Tetranychidae)	KO, US	F, L	N_c	Y	CPC, 1999; Baker and Tuttle, 1994; Jeppson, *et al.*, 1975; Lee, *et al*., 1992
Panonychus ulmi Koch (Acarina: Tetranychidae)	KO, US	L	N_c	N	CPC, 1999; Hong, 1995; Jeppson, *et al.*, 1975
Paranthrene regalis (Butler) (Lepidoptera: Sesiidae)	KO	S	Y	N	Clausen, 1931; Hong, 1995; Shiraki, 1952
Parlatoria theae Cockerell (Homoptera: Diaspididae)	KO, US	S	N_c	N_1	Hong, 1995; Nakahara, 1982
*Paropsides duodecimpustulat*a (Gebler) (Coleoptera:Chrysomelidae)	KO	L	N	N	Hong, 1995
Parthenolecanium corni Bouche (Homoptera: Coccidae)	KO, US	L, S	N_c	N_2	Ben-Dov, 1993; CPC, 1999
Parthenolecanium persicae (F.) (Homoptera: Coccidae)	KO, US	L, S	N_c	N_2	Gill, 1988; Hill, 1997; Hong, 1995
Phyllopertha diversa Waterhouse (Coleoptera: Scarabaeidae)	KO	L	Y	N	Hong, 1995; Kawasaki and Tamaki, 1985
Phymatodes albicinctus Bates (Coleoptera: Cerambycidae)	KO	S	Y	N	Anon, 1986
Phymatodes maaki (Kraatz) (Coleoptera: Cerambycidae)	KO	S	Y	N	Duffy, 1968; Hong, 1995
Phytonemus pallidus (Banks) (Acarina: Tarsonemidae)	KO, US	L, W	N	Y	Banks, 1912; Cho, *et al*., 1993; CPC, 1999

Pinnaspis strachani (Cooley) (Homoptera: Diaspididae)	KO, US (AL, FL, HI, MS, TX)	F, W	N_c	Y	CPC, 1999; Nakahara, 1982; Paik,1972
Planococcus citri (Risso) (Homoptera:Pseudococcidae)	KO, US	W	N_c	Y	Bivins and Deal, 1973; CPC, 1999; Hill, 1997; Paik, 1972
Plautia stali Scott (Hemiptera: Pentatomidae)	KO, US (HI)	F, L, S	Y_n	N**	Hong, 1995; Moriya and Shiga, 1984
Polistes snelleni De Saussure (Hymenoptera: Vespidae)	KO	F_a	N_c	N	Hong, 1995; Hill, 1997
Polygonia c-auerum L. (Lepidoptera: Nymphalidae)	KO	L	Y	N	Hong, 1995
Popillia japonica Newman (Coleoptera: Scarabaeidae)	KO, eUS	L	Y_n	N	Anon, 1986; CFR301.48
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Homoptera: Diaspididae)	KO, US	S	N_c	N	Hong, 1995; Nakahara, 1982
Pseudococcus comstocki (Kuwana) (Homoptera: Pseudococcidae)	KO, US	F, W	N_c	Y	Anon, 1986; Metcalf and Metcalf, 1993
Quadraspidiotus perniciosus (Comstock) (Homoptera: Diaspididae)	US, KO	S	N_c	N_2	Hong, 1995; Nakahara, 1982
Rhagastis mongoliana (Butler) (Lepidoptera: Sphingidae)	KO	L	Y_n	N	Clausen, 1931; Hong, 1995; Zhang, 1994
Rhomborrhina japonica Hope (Coleoptera: Scarabaeidae)	KO	L	Y	N	Hong, 1995
Ricania japonica Melichar (Homoptera: Ricaniidae)	KO	L	Y	N	Avidzba and Bobokhidze, 1982; Clausen, 1931; Dzhashi, *et al*., 1982; Hong, 1995; Metcalf, 1968
Saissetia coffeae (Walker) (Homoptera: Coccidae)	KO, US	L, S	N_c	N_1	Ben-Dov, 1993; Hamon and Williams, 1984; Hill, 1997
Sarbanissa subflava (Moore) (Lepidoptera: Noctuidae)	KO	L	Y	N	Hong, 1995; Poole, 1989
Scirtothrips dorsalis Hood (Homoptera: Thripidae)	KO, US (HI)	W	Y_n	N	CIE, 1986; EPPO, 1997; Hill, 1997; Hong, 1995; Lewis, 1997

Serrodes campana (Guenee) (Lepidoptera: Noctuidae)	KO	F_a, L	Y	N_1	Danziger, 1982; Hong, 1995; Poole, 1989; Zhang, 1994
Sparganothis pilleriana (Denis & Schiffermuller) (Lepidoptera: Tortricidae)	KO	F, L, S	Y_n	Y	Anon, 1986; Carter, 1984; Helle, 1991; Zhang, 1994
Spilosoma imparilis (Butler) (Lepidoptera: Arctiidae)	KO	L	Y	N	Hong, 1995, Zhang, 1994
Spilosoma subcarnea Walker (Lepidoptera: Arctiidae)	KO	L	Y	N	Clausen, 1931; Hong, 1995; Shiraki, 1952
Spirama retorta (Clerck) (Lepidoptera: Noctuidae)	KO	F_a, L	Y_n	N_1	Banziger, 1982; Hong, 1995: Kim and Lee, 1986; Poole, 1989; Yoon and Lee, 1974
Stathmopoda auriferella (Walker) (Lepidoptera:Oecophoridae)	KO	F	Y	Y	Cho, 1994; Hong, 1995; Shiraki, 1952
Tetranychus kanzawai Kishida (Acarina: Tetranychidae)	KO	L, S	Y	N	CPC, 1999; Hong, 1995; Jeppson, *et al.*,1975; Kim, *et al.*, 1993; Kondo, *et al.*, 1987
Tetranychus urticae Koch (Acarina: Tetranychidae)	KO, US	L	N_c	N	Baker and Tuttle, 1994; CPC, 1999
Theretra clotho (Drury) (Lepidoptera: Sphingidae)	KO	L	Y	N	CPC, 1999; Kim, *et al.*, 1982
Theretra japonica Orza (Lepidoptera: Sphingidae)	KO? JP, CI	L	Y_n	N	Hong, 1995; Pittaway 1996
Theretra oldenlandiae (F.) (Lepidoptera: Sphingidae)	KO	F_a, L	Y	N_1	Hong, 1995; Kim, *et al.*, 1993; Park, *et al.*, 1988; Zhang, 1994
Thinopteryx crocoptera (Koller) (Lepidoptera: Geometridae)	KO	L	Y	N	Hong, 1995
Thrips hawaiiensis (Morgan) (Homoptera: Thripidae)	KO, US	F, L	N_c	Y	CIE, 1983; CPC, 1999; Nakahara, 1994
Thrips tabaci Lindemann (Homoptera: Thripidae)	KO, US	L	N_c	N	APPPC, 1987; CIE, 1969; CPC,1999
Vespa mandarina Smith (Hymenoptera: Vespidae)	KO	F_a	N_c	N	Hill, 1997; Hong, 1995

Vespa xanthoptera Cameron (Hymenoptera: Vespidae)	KO	F_a	N_c	N	Hill, 1997; Hong, 1995
Viteus vitifoliae (Fitch) Homoptera: Phylloxeridae)	KO, US	L, R	N	N	EPPO, 1999; Hong, 1995; Metcalf and Metcalf, 1993
Xestia c-nigrum L. (Lepidoptera: Noctuidae)	KO, US	L	N_c	N	CPC, 1999; Eguchi, 1926; Hill, 1997; Lafontaine, 1998
Xyleborus adembratus Blandford (Coleoptera: Scolytidae)	KO, US (4 states)	S	N	N	Hong, 1995
Xyleborus saxesenii (Ratzeburg) (Coleoptera: Scolytidae)	KO, US	S	N_c	N	Hong, 1995; Wood, 1982
Xylotrechus pyrrhoderus Bates (Coleoptera: Cerambycidae)	KO? JP, CI	S	Y_n	N	Ashihara, 1982; Clausen, 1931; Hong, 1995
Viruses					
Broad bean wilt fabavirus (Comoviridae)	KO, US (FL, MN, NY)	W	N	Y	Chang and Chung, 1987; CPC, 1999; Pearson and Goheen, 1988
Tomato ringspot nepovirus (Comoviridae)	KO, US	F, W	N	Y	CPC, 1999; Pearson and Goheen, 1988
Bacteria					
Agrobacterium tumefaciens (Smith & Townsend) Conn (Eubacteriales)	KO, US	F, R	N_c	Y	Bradbury, 1986; CPC, 1999
Pseudomonas syringae pv. *syringae* van Hall (Pseudomonadales)	KO, US	W	N_c	Y	Bradbury, 1986; CPC, 1999
Pseudomonas viridiflava (Burkholder) Dowson (Zymobacteria: Pseudomonadales)	KO, US	F, L, R	N	Y	Choi, 1989; CPC, 1999; Young and Fletcher, 1997
Fungi					
Acrospermum viticola Ikata (Ascomycetes: Dothideales)	KO	L	Y	N	Hong, 1995; KSPP, 1972
Alternaria alternata (Hyphomycetes)	KO, US	F, L	N_c	Y	CPC, 1999; Farr, *et al*., 1989
Botryosphaeria dothidea (Moug.) Ces. & De Not (Ascomycota: Dothideales)	KO, US	F, S	N_c	Y	CPC, 1999; Farr, *et al*., 1989

Botryotinia fuckeliana (de Bary) Whetzel (Anamorph: *Botrytis cinerea* Pers.:Fr.) (Ascomycetes: Helotiales)	KO, US	F, L, S	N_c	Y	Farr, *et al.*, 1989; Hong, 1995; MacFarlane 1968
Colletotrichum acutatum J.H.Simmonds (Coelomycetes)	KO, US	F	N_c	Y	CPC, 1999; EPPO, 1999
Coniella diplodiella (Speg.) Petr & Syd (Syn: *Coniothyrium diplodiella* (Speg.) Sacc.) (Coelomycetes)	KO, US	F	N_c	Y	CPC, 1999; EPPO, 1999; Farr, *et al*., 1989; Hong, 1995; KSPP, 1972
Cryptosporella viticola Shear (Pyrenomycetes: Diaporthales)	KO, US	F	N_c	Y	Farr, *et al*., 1989; Hong, 1995
Elsinoe ampelina Shear (Anamorph: *Sphaceloma ampelinum* deBary) (Ascomycetes: Dothideales)	KO, US	F, L	N_c	Y	Farr, *et al*., 1989; Hong, 1995; KSPP, 1972
Glomerella cingulata (Stoneman) Spauld.& Schrenk (Pyrenomycetes: Phyllachorales)	KO, US	F, L	N_c	Y	Farr, *et al*., 1989; Hong, 1995
Macrophomina phaseolina (Tassi) Goidanich (Coelomycetes)	KO, US	R	N_c	N	Boewe, 1963; Farr, *et al*., 1989; Raabe, *et al*., 1981
Monilinia fructigena Honey in Whetzel (Syn = *Monilia fructigena* Pers.) (Ascomycetes: Leotiales)	KO, US (CA , MD)	F	Y_n	Y	CPC, 1999; EPPO, 1999; Farr, *et al*., 1989
Monochaetia spp. (Coelomycetes)	KO	L	N_c	N	Hong, 1995; KSPP, 1972
Nectria haematococca var. brevicona (Wollenw.) Gerlach (Anamorph: *Fusarium solani* (Martius) Sacc.) (Ascomycetes: Hypocreales)	KO, US	R	N_c	N	CPC, 1999; Farr, *et al*., 1989
Nectria radicicola Gerlach & L. Nilsson (Aanamorph: *Cylindrocarpon destructans* (Zinssmeister) Scholten) (Ascomycetes: Hypocreales)	KO, US (CA)	R	N_c	N	CPC, 1999; Farr, *et al*., 1989

Pestalotiopsis uvicola (Speg.) Bissett(Syn: *Pestalotia uvicola* Speg.) (Coelomycetes)	KO, US	F	N	Y	Farr, *et al*., 1989; Hong, 1995; KSPP, 1972
Phaeoisariopsis vitis (Lev.) Saw. (Hyphomycetes)	KO	L	Y	N	Park, 1958
Phyllosticta ampelecida (Engelm.) van der Aa (syn. *P. viticola* Sacc et Speg.) (Teleomorph: *Guignardia bidwellii* (Ell.) Vialle et Ravaz) (Coelomycetes)	KO, US	F, L, S	N	Y	Farr *et al.*, 1985; Park, 1958; Pearson and Goheen, 1988
Physalospora baccae Cavara (Ascomycetes: Amphishaeriales)	KO	F, L, S	Y	Y	Hong, 1995; KSPP, 1972; Shin *et al.*, 1984; Tanaka, *et al*.,1976
Physopella ampelopsidis (Diet. & P. Syd) Cummins & Ramachar (Syn: *Phakopsora ampelopsidis* Dietel & Sydow) (Teliomycetes: Uredinales)	KO, US	F, L, S	N_c	Y	Anon., 1986; EPPO, 1999; Farr, *et al*., 1989; Hong, 1995
Phytophthora cryptogea Pethybridge & Lafferty (Oomycetes: Pythiales)	KO, US	L, R, S	N	N	CPC, 1999; Farr, *et al*., 1989; Jee et al., 1996
Plasmopara viticola (Berk.& M.A Curtis) Berl.& De Toni (Oomycetes: Peronosporales)	KO, US	F, L, S	N_c	Y	CPC, 1999; Farr, *et al*., 1989; Hong, 1995; KSPP, 1972
Pseudocercospora vitis (Lév.) Spegazzini (Syn: *Cercospora viticola* (Ces.) Sacc.) (Hyphomycetes)	KO, US	L	N_c	N	Anon., 1986; Farr, *et al*., 1989; Hong, 1995
Rhizopus stolonifer (Ehrenb.:Fr.) Vuill (Zygomycetes)	KO, US	F	N_c	Y	CPC, 1999; Farr, *et al*., 1989
Rosellinia necatrix Prill. (Ascomycetes: Xylariales)	KO, US	R	N	N	CPC, 1999; Farr, *et al*., 1989
Septoria badhami Berk. & Br. (Coelomycetes)	KO	L	Y	N	Grove, 1935; Hong, 1995; KSPP, 1972

Uncinula necator (Schwein.) Burrill (Anamorph: *Oidium tuckeri* Berk.) (Ascomycetes: Erysiphales)	KO, US	F, L, S	N_c	Y	Anon., 1986; Farr, *et al*., 1989; Hong, 1995; KSPP, 1972
Verticillium dahliae Kleb. (Hyphomycetes)	KO, US	L, S, W	N_c	Y	CPC, 1999; EPPO, 1999; Farr, *et al*., 1989: Park, *et al*., 1995
Nematodes					
Criconemella spp. (Cricomenatidae)	KO, US	R	N	N	CPC, 1999
Helicotylenchus pseudorobustus (Steiner) Golden (Tylenchida: Hoplolaimidae)	KO, US	R	N_c	N	Choi, 1975; CPC, 1999
Hemicriconemoides mangiferae Siddiqi (Tylenchida:Criconematidae)	KO, US (CA,FL)	R	Y_n	N	Choi and Jeong, 1995; CPC, 1999
Meloidogyne arenaria (Neal) Chitwood (Tylenchida:Meloidogynidae)	KO, US	R	N_c	N	Choi, 1981; CPC, 1999; SON, 1984
Meloidogyne hapla Chitwood (Tylenchida:Meloidogynidae)	KO,US	R	N_c	N	Chitwood, 1949; Choi, 1981; CPC, 1999; Evans, *et al*., 1993; Tayler and Sasser, 1978
Paratrichodorus porosus (Allen) Siddiqi (Triplonchida:Trichodoridae)	KO,US	R	N_c	N	CPC, 1999; Decraemer, 1995; Evans, *et al*, 1993; Lee, 1976
Paratylenchus lepidus Raski (Paratylenchidae)	KO	R	Y	N	Pinochet and Raski, 1977
Pratylenchus penetrans (Cobb) Filipjev & Schuurmans Stekhoven (Tylenchida: Pratylenchidae)	KO, US	R	N_c	N	CPC, 1999; Evans, 1993; Jeong and Kim, 1989; Siddiqi, 1985
Trichodorus spp. (Triplonchida:Trichodoridae)	KO, US	L, R	N	N	CPC, 1999; Decraemer, 1995; Norton, *et al*., 1984
Tylenchulus semipenetrans Cobb (Tylenchida: Tylenchulidae)	KO, US	L, R	N	N	Choi, 1975; CPC, 1999; EPPO, 1999; Fielding and Hollis, 1956; SON, 1984

[0] Distribution: KO - Korea, US - United States

L-Leaves, S-Stem, W-Whole plant, F-Fruit, F_a-Fruit (adult stage only), Y-Yes, N-No, Y_n-Listed

in the USDA catalog of intercepted pests as 'Actionable', N_c-Listed in the non- reportable dictionary as 'Non-Actionable'

N_1, N_2 -- There is a group of lepidopterans in which the adult stage attacks fruit of the grape plants, known as the 'fruit piercing moths', indicated in the pest list as such with an "F_a" in the "Plant Part Affected" column. Because these moths are associated directly with the fruit and fruit cluster, there is a chance that they may be present at harvest for various reasons, *i.e.*, temperature slowing their activity down while feeding. This does not seem to pose a likely threat though, as most literature indicates that adults fly into orchards at night, feed for some time on fruit, and then depart. This group of moths are therefore considered NOT likely to follow the pathway, and are notated with an "N_1" in the "Likely to Follow Pathway" column in the pest list.

**Amphipyra livida* attacks 'berry' fruit (Musich, 1976) but it is unclear if this pest attacks fruits of other plants as well.

** *Plautia stali* is a sap sucking insect that may very likely be present at harvest on the grape fruit, but is not likely to follow the pathway because of it's very fast movement and tendency to drop to the ground when threatened, *i.e.*, during harvest.

Any pest species listed in the above pest list that has a "Y" in the "Quarantine Pest" column, is considered to be a quarantine pest of grapes from Korea. Should any of these pests be intercepted on commercial (or any other) shipments of *Vitis* spp. fruit, quarantine action may be taken.

Only those quarantine pests that can reasonably be expected to follow the pathway, *i.e.*, be included in commercial shipments of *Vitis* spp. fruit, were analyzed in detail. Only quarantine pests that have a "Y" in the "Likely to Follow Pathway" column AND a "Y" in the "Quarantine Pest" column were selected for further analysis and subjected to steps 5-7 below (USDA, 2000).

Another issue concerning grape fruit imports are stem feeding adults of the Diaspidae and Coccidae. The concern is the presence of these Homopterans on the portion of the stem that gets harvested with the grapes. Certainly the immature stage, called 'crawlers', may be present on the stem portion close to the grape clusters, searching for a suitable location to pierce the plant tissue with their stylets The 'final resting spot' for these pests, however, is mainly on the underside of leaves or on the stem tissue more closely related to the foliage. For this reason, these pests are considered NOT likely to follow the pathway.

Other plant pests in this Assessment, not chosen for further scrutiny, may be potentially detrimental to the agricultural production systems of the United States; however, there were a variety of reasons for not subjecting them to further analysis. For example, they are associated mainly with plant parts other than the commodity; they may be associated with the commodity (however, it was not considered reasonable to expect these pests to remain with the commodity during processing), or they have been intercepted as biological contaminants of these commodities during inspection by Plant Protection and Quarantine Officers but would not be expected to be

present with every shipment. In addition, the biological hazard of organisms identified only to the generic level is not assessed due to the lack of adequate biological/taxonomic information. This lack of biological information on any given insect or pathogen should not be equated with low risk. By necessity, pest risk assessments focus on those organisms for which biological information is available. By developing detailed assessments for known pests that inhabit a variety of niches on the parent species, *i.e.*,on the surface of or within the bark/wood, on the foliage, *etc*., effective mitigation measures can be developed to eliminate the known organism and any similar unknown ones that inhabit the same niches.

5. Consequences of Introduction

The consequences of introduction (Table 3) were considered for each quarantine likely to follow the pathway. Each pest is rated on five biological features (Risk Elements, REs) (USDA (2000) The cumulative score for Risk Elements is considered to be a biological indicator of the potential destructiveness of the pest.

Table 3: Risk Rating for Consequences of Introduction: (Risk Elements #1-5)

Pest	Climate/ Host Interaction	Host Range	Dispersal Potential	Economic Impact	Environ-mental Impact	Risk Rating
Conogethes punctiferalis (Lepidoptera: Pyralidae)	High	High	High	Medium	Medium	High
Eupoecilia ambiguella (Lepidoptera:Tortricidae)	High	Medium	High	High	Medium	High
Nippoptilia vitis (Lepidoptera: Pterophoridae)	Medium	Low	Medium	Medium	Low	Medium
Sparganothis pilleriana (Lepidoptera: Tortricidae)	Medium	High	Medium	Medium	High	High
Stathmopoda auriferella (Lepidoptera: Oecophoridae)	High	High	Medium	Low	Low	Medium
Monilinia fructigena (Ascomycetes: Leotiales)	High	High	High	Low	Medium	High
Physalospora baccae (Ascomycetes:Amphishaeriales)	High	Low	Medium	Medium	Medium	Medium

6. Introduction Potential

Each pest is rated with respect to likelihood of introduction based on two separate components. First, an estimate is made concerning the amount of commodity likely to be imported (RE 6).

Second, pest opportunity (RE 7) is estimated using five biological features. Details of the two REs and the rating criteria are provided in USDA (2000). These ratings and the cumulative (Total) score for Risk Elements 6 and 7, *i.e.*, the "Likelihood of Introduction Risk Rating" are shown in Table 4.

Table 4: Risk Rating for Likelihood of Introduction: (Risk Elements #6 and #7)

Pest	Quantity imported annually	Likelihood of surviving postharvest treatment	Likelihood of surviving shipment	Likelihood of not being detected at port of entry	Likelihood of moving to suitable habitat	Likelihood of finding suitable hosts	Risk Rating
Conogethes punctiferalis	Low	High	High	Medium	High	High	High
Eupoecilia ambiguella	Low	High	High	Medium	High	Medium	High
Nippoptilia vitis	Low	High	High	Medium	Medium	Low	Medium
Sparganothis pilleriana	Low	High	High	Medium	Medium	High	High
Stathmopoda auriferella	Low	High	Medium	Medium	High	High	High
Monilinia fructigena	Low	High	Medium	Medium	Medium	High	Medium
Physalospora baccae	Low	Medium	Medium	Medium	High	Low	Medium

7. Conclusion: Pest Risk Potential and Phytosanitary Measures

The measure of pest risk potential combines the risk ratings for consequences and likelihood of introduction (USDA, 2000). The estimated pest risk potential for each quarantine pest selected for further analysis for the importation of *Vitis* spp. fruit is provided in Table 5.

Table 5: Pest Risk Potential	
Conogethes punctiferalis (Guenee) (Lepidoptera: Pyralidae)	High
Eupoecilia ambiguella Hubner (Lepidoptera: Tortricidae)	High
Nippoptilia vitis (Sasaki) (Lepidoptera: Pterophoridae)	Medium
Sparganothis pilleriana (Denis & Schiffermuller) (Lepidoptera: Tortricidae)	High
Stathmopoda auriferella (Walker) (Lepidoptera: Oecophoridae)	High
Monilinia fructigena Honey in Whetzel (Ascomycetes: Leotiales)	High
Physalospora baccae Cavara (Ascomycetes:Amphishaeriales)	Medium

Plant pests with a high Pest Risk Potential may require specific phytosanitary measures. The choice of appropriate sanitary and phytosanitary measures to mitigate risks is undertaken as part of Risk Management and is not addressed, *per se,* in this document.

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